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OF COMMERCE

HENRY A. WALLACE, *Secretary*

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APPAREL AND OTHER FINISHED PRODUCTS MADE FROM FABRICS AND SIMILAR MATERIALS

KERN, JEAN G. and others. Special protective garment for aviators (Seenotschutzgerat). Off. Pub. Bd., Report, PB 196. 1945. 7 p. Price: Mimeo.- .10¢

CIOS XXIII - 9

Description of a garment designed to protect aviators and navy personnel against freezing in cold ocean water. The garment was developed by Prof. Mecheels; it consisted of 3 layers and contained a special powder in the middle layer, which was to form a protective foam upon contact with salt water. The powder consisted of 24.4% Mersolat H-30 &, 41.46% Na HCO_3, and 34.14% citric acid. Composition of another less effective powder is also given: 24.4% IGEPON AP extra conc. &, 30.9% $NaHCO_3$ and 44.7% Benzoic acid. Preparation of Mersolat H-30 and Igepon AP extra conc. is outlined in the appendix. A person equipped with the garment can exist in 0 degrees C water for 3 hours or more.

CHEMICALS AND ALLIED PRODUCTS

ADAMSON, D. W. Account of Prof. R. Kuhn on "3065", a benzil derivative. Off. Pub. Bd., Report, PB 1. 1945. 6 p. Price: Mimeo.- .10¢

Brief account of synthesised simple derivatives of benzil which have been found to have the same order as penicillin, and in some cases more effective. Most effective, termed "3065", is the 2:2' dehydroxy- 5:5' -dibromo benzil. "3065" is stable towards heat, is little soluble in water, but is soluble in weak alkalis and forms a water soluble complex with boric acid. Brief report is also given on the therapeutic value of unsaturated cyclic hydrocarbons, such as cyclo-octane tetraene and cyclodecane pentaene. Cyclodecane pentaene, a deep blue liquid, is stable for several months in the pure state, and for years in the presence of phenols. It has the important property of being active against B. Coli infections and hish activity against inflammation. Used prophylactually or applied 2 hours after contamination, it has proved very effective against mustard gas burns. Report, PB 5, gives further information.

ADAMSON, D. W. Further details on synthesis of "3065". Off. Pub. Bd., Report, PB 5. 1945. 6 p. Price: Mimeo.- .10¢

Additional information to Report, PB 1, Account of Prof. R. Kuhn on "3065", a benzil derivative. Report gives information on the following: A. Further details on synthesis of 3056; B. Synthesis of 3214 (an analogue of 3065); C. Position with regard to samples; D. Clinical report; E. Further information on cyclodecane pentaene.

ALDRICH, R. C. Synthetic lubricating oil production in France. Off. Pub. Bd., Report PB 365. 1945. 9 p. Price: Mimeo.- .10¢ CIOS XXIII - 5

This report deals with production of synthetic lubricants at two French plants, one at Lille, the other at Marseille. Processes are briefly described, and products discussed, as to yield, and quality. Analysis of the products produced are tabulated and uses indicated.

ATWELL, H. V. and SCHROEDER, W. C. Synthetic lubricating oil plant, Rheinpreussen, Hamberg. Off. Pub. Bd., Report, PB 283. 1945. 17 p. Price: Mimeo.- .25¢

CIOS XXIII - 9

Description of plant and process of manufacture. The lubricating oil synthesis consists broadly in chlorinating a Fischer-Tropsch middle oil, reacting this with naphthalene in the presence of aluminum chloride as a catalyst, separating the sludge, neutralizing, and fractionally distilling the lube oil product. Includes some photographs of plant and equipment.

BEESTON, A. W., CROSS, L. C., and DRIVER, J. E. German chemical warfare activities, Paris area. Off. Pub. Bd., Report, PB 160. 1944. 9 p. Price: Mimeo.- .10¢

Survey of chemical warfare plants in Paris area. No evidence of any offensive CW work (research on manufacture) carried on in France by Germans. German interest in French CW centered on DM and the Engin-Z, and to a less extent on mustard gas and arsine.

BELLAMY, L. J. and NILLSON, K. T. Dr. Michael Jahrstorfer, Lab. Director, I. G. Oppau, evacuated to Heidelberg. Off. Pub. Bd., Report, PB 106. 1945. 2 p. Price: Mimeo.- .10¢

Describes work of Dr. Jahrstorfer on synthetic waxes, made from Montan wax extracted from lignite, with benzene and alcohol, then bleached with Chromic and sulphuric acids. Used (a) as substitute for carnauba wax by esterification with glycols (b) in phlegmatising explosives, by detonising (c) for making a grease with mineral oils, which is claimed has advantages as regards stability at high temperatures (d) to obtain long chain paraffin waxes of high melting point, by ketonising followed by hydrogenation. He has also worked on the Scholler process for obtaining sugar from wood.

BELLAMY, L. J., and HENDRICKS, T. A. Elektrochemisches Werke Munchen A.G. Off. Pub. Bd., Report, PB 11. 1945. 5 p. Price: Mimeo.- .10¢

This factory has been engaged in the production of hydrogen peroxide 82% (T stoff) and of sodium and calcium permanganate (Z stoff made from the potassium salt), as well as closely associated with the whole development of chemical fuels and explosives derived from the reaction of T stoff with hydrazine hydrate, permanganates, alcohols and easily oxidisable materials. They have also been closely concerned with the development of catalysts for use during manufacture of ingredients and during the use of the finished products. The development of production methods for hydrazine hydrate and its solutions in methyl alcohol/water mixtures are given as well as the difficulties which had to be overcome. These solutions are the basic fuels used in conjunction with peroxide and are prepared to very strict Luftwaffe specifications.

BELLAMY, L. J., NILSSON, K. T. and HAUGHT, J. W. I. G. plastics activity. Off. Pub. Bd., Report, PB 8. 1945. 3 p. Price: Mimeo.- .10¢

Information is given on the work of the I. G. Plastics Laboratory on the manufacture of plastics and their use. The following subjects are covered: Polyvinyl acetate, Polyacrylic esters, Polystyrene, Polyvinyl chloride, Chlorinated polyvinyl chloride, Igamide (nylon), Polyethylene (lupolene), Vinylidene chloride polymer, Melamine resins, and Urea resins.

BELLAMY, L. J., and NILLSON, K. T. I. G. production of synthetic fatty acids. Off. Pub. Bd., Report, PB 6. 1945. 3 p. Price: Mimeo.- .10¢

Brief information is given on the synthetic fatty acids industry in Germany, dealing with production, separation and utilization of fatty acids, other agents added to soaps to improve performance, grease manufacture and thickening agents. Brief information is also given of a soap powder substitute which contained no fatty acid, but possibly made from hydrocarbons by treatment with sulphur dioxide and chlorine. This product appeared under the trade name, "Mersol".

BELLAMY L. J. and NILLSON, K. T. I. G. production of synthetic fatty acids. Off. Pub. Bd., Report, PB 100. 1945. 3 p. Price: Mimeo.- .10¢

Description of methods of producing synthetic fatty acids, based on interviews with Dr. Kelhecke. Synthetic fatty acids were produced by a similar method at I. G. Oppau, I.G. Heidebreck Upper Silesia, and at Deutsche Fettsaure-werke Witten Ruhr. Method consists of the oxidation of paraffins (normally from the TTH Hydrogenation process on lignite) using the same technique employed by the Jasco Co. of America which held licences from I. G. A small proportion of I. G. Kaurit-Leim (a phenol formaldehyde resin) was sometimes added to softer soap made from synthetic fatty acids, but no additives were used to improve detergent properties. In connection with the development of tropical greases, it was learned that the addition of 2% of calcium benzoate to a soda base grease made with synthetic fatty acids would render it water resistant without lowering the melting point which was about 200°C. Aluminum stearate and similar products from mixed fatty acids were made on the pilot plant scale for use in waterproofing and also as thickening agents for lubricating oils.

BIDLACK, V. C., CURTIS, F. J. and HARRIS, J. M. Anorgana G.M.B.H. Werk Gendorf. Chemical warfare. Off. Pub. Bd., Report, PB 163. 1945. 37 p. Price: Mimeo.- .25¢

CIOS XXIV - 19 2c

In addition to general information on Anorgana GmbH, a subsidiary of I. G. Farbenindustrie AG, technical data is given on chemicals manufactured from acetylene, processes evolved by Dr. Reppe for development of acetylene compounds, lacquers, varnishes, waxes and emulsions, pharmaceuticals, and miscellaneous items, namely, Igepon G, (a detergent) Ramasite, (a water proofing agent), Blattan, (a contact insecticide), and polystyrene. Formula charts are included for acetylene + formaldehyde, Y -butyrolactone, and acetylene + acetaldehyde.

BIDLACK, V. V. Chemische Werke Albert Biebrick, near Wiesbaden. Off. Pub. Bd., Report, PB 389. 1945. 6 p. Price: Photstat $1.00 - Microfilm .50¢

This report deals with resin coatings made by this plant. The coatings are chiefly phenolic resins in suitable solvents. A number of these are described.

BIDLACK, V. C. and others. Dr. Alexander Wacker - Gesellschaft Für Elektrochemische Industrie Burghausen, Germany. Off. Pub. Bd., Report, PB 208. 1945. 30 p. Price: Mimeo.- .25¢

CIOS XXV - 20

Report on one of outstanding German companies engaged in the manufacture of chemicals from acetylene which they produce from calcium carbide. Outlines organization, raw materials requirements, products and capacities, and pending research products. Descriptions of processes in producing: (1) Butanol and Butyraldehyde; (2) Chlorinated Hydrocarbons; (3) Alcohol Solvents; (4) Ethyl Acetate - "Etrol"; (5) Acetic Anhydride; (6) Insecticides; (7) Artificial Shellac; and (8) Polyvinyl emulsions. Contains several diagrams.

BLANCHARD, KENNETH C. An evaluation of the work on antimalarials of the I.G. Farbenindustrie, Elberfeld, Germany - visited 30 May-1 June 1945. Off. Pub. Bd., Report, PB 246. 1945. 20 p. Price: Mimeo.- .25¢

CIOS - XXIV - 20

As in the United States, the Germans have assayed for antimalarial activity, numerous substances prepared for other purposes, i.e. dyes, insecticides, anesthetics, etc. This report discusses screening methods, clinical examination of drugs, causal prophylaxis, cure of avian infections, synthetic antimalarial drugs, and various antimalarial compounds (Endochin, Plasmochin series, Acridines, Dimeplasmin and Dispromin).

BROWN, J. S. and ALDRICH, R. C. Liquid oxygen plants in France and Belgium Off. Pub. Bd., Report, PB 371. 1945. 6 p. Price: Mimeo.- .10¢

CIOS XXVIII - 2

Visit in February and March 1945 to Liege, Ougree, Briey and Wittring (Saargruben). The Germans did not use existing plants for military purposes but built special units such as at Liege and Wittring.

BULLARD, R. H. Societe Belge De L'Azote. Off. Pub. Bd., Report, PB 168. 1944. 7 p. Price: Mimeo.- .10¢

An investigation of conditions in a Belgium chemical plant producing various nitrogen compounds. Products mainly fertilizers, were used mostly in Belgium and little shipped to Germany. "Slow-down" and sabotage made this industry of little use to Germans.

BULLARD, R. H. Societe Belge L'Azote Liege - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 170. 1945. 6 p. Price: Mimeo.- .10¢

CIOS II - 11

Brief report on products produced and methods used at this plant manufacturing inorganic and organic chemicals. Chief raw material was coke oven gas. During the war this plant produced compressed methane gas for use as motor fuel as follows: Coke oven gas, which contains CO_2, CO, CH_4 C_2H_4 H_2 and N_2 was scrubbed to remove the CO_2. Gas was then cooled to liquify the CO, CH_4 and C_2H_4, thus separating from the H_2 and N_2. The CO is removed from the CH_4 and C_2H_4 by fractionation and the methane is compressed into cylinders for use. An original method of producing acetone consists of reacting alcohol and water over a catalyst in one step, according to the equation: $CH_3 CH_2 OH + H_2O = CH_3 CO CH_3 + CO_2 + H_2$. Catalyst used was not disclosed. Notes on methods of producing other products are also given.

CALCOTT, W. S. and WHITE, L.M. I.G. Farben A.G. Bunawerk. Off. Pub. Bd., Report, PB 188. 1945. 14 p. Price: Mimeo.- .25¢

CIOS - XXII - 20

Report of a visit to this plant, giving lists of raw materials purchased, products made and processes used to make them, including catalysts, temperatures, pressures, etc., capacity, source of raw materials, and raw materials and finished products on hand. This plant produced Buna S, other Bunas, and chemicals for its production, as well as utilizing by-products.

CALCOTT, W. S., BOYNE, J. G., and LEAPER, P. J. I. G. Farben, A.G. Leuna, Germany. Off. Pub. Bd., Report, PB 187. 1945. 8 p. Price: Mimeo.- .10¢

CIOS - XXII - 19

This plant was extensively damaged by bombing. Estimated to still have a synthetic ammonia capacity of 150 T/day. Chief products made were alcohols, lubricating oils, phenols, amines, and adipic acid for "Luran", the I. G. "Nylon", "Mersol" and Mersolat" - soap substitutes, aldehydes, acids, etc. Processes used briefly indicated. Production figures before bombing given, and organic research program outlined.

CALCOTT, W. S. I. G. Farbenindustrie Plant, Frose, Germany. Fuels and lubricants. Off. Pub. Bd., Report, PB 281. 1945. 3 p. Price: Mimeo.- .10¢

CIOS XXII - 15

This plant is primarily for the production of tetraethyl lead and ethyl fluid. It is undamaged and ready to operate. Ethyl Gasoline Corp. process used. 300 metric tons per month of tetraethyl lead made. Operation details briefly given. Management Orders filed with MIRS.

CHAFFEE, C. C. and ATWELL, H. V. I. G. Farbenindustrie, Mainkur-Hoechst. Off. Pub. Bd., Report, PB 292. 1945. 33 p. Price: Mimeo.- .25¢

CIOS XXVI - 79

Information obtained from the plant manager, Dr. Giesler, regarding organization, principal products, manufacturing processes and lines of research; also on the crude oil demulsifying agents known as "Dismulgans". There are related processes (in German) for manufacture of: "Humectol CX (Dismulgan V), Kaurit MKF, Trypaflavin (a prophylactic for colds), Thiodiphenylamin S, Dismulgan IV and Dismulgan VII. Interesting facts, mainly production statistics are given on ocenolsulfate, melamine, maprehal (a condensation product of melamine and formaldehyde), Pollon I (acronyl plastic used for waterproofing textiles)and phenothiazine.

CHINARD, FRANCIS T. and others. I. G. Farbenindustrie A. G., Abteilung: Behring Werke A. D., Lahn, Germany. Off. Pub. Bd., Report, PB 234. 1945. 19 p. Price: Mimeo.- .25¢

CIOS XXII - 13

This plant is the largest producer in Germany of therapeutic antisera, vaccines and related products. Plant is undamaged. A complete list of standard biological products made is given. Comparison of methods used for antisera with U. S. methods is briefly made. Methods of production are briefly described. Photographs are presented illustrating the technique used in obtaining infected louse material for Typhus vaccine. Stocks on hand on 4/1/45 and for comparison in 1935 and 1931 are given. Monthly production capacity is also listed. Recommendations for continued use of the plant are given.

CJITTICK, M. B. and SHERWOOD, T. K. French and Belgium chemical industry. Off. Pub. Bd., Report, PB 171. 1944. 13 p. Price: Mimeo.- .25¢

Gives bits of information regarding French, Belgian and German chemical industries and chemists through visits to Soc. des Usines Chimiques Rhone-Poulec and Societe d'electrochimie, d'electro-metallurgie, et des Acieries electriques d'ugine in France and Comptoir Belge de'l'Azote (Cobelaz) and Union Chimique Belge in Belgium, and visits to M. Jean Lecomte at the Sorbonne and Prof. O. Dony at University of Brussels. Lists chemicals manufactured by these companies, amounts demanded and supplied to Germany, and companies affiliated with "Cobelaz".

CULLUMBINE, H., SEYDEL, PAUL V. and MUNN, JAMES F. Interviews on chemical warfare. Off. Pub. Bd., Report, PB 161. 1944. 15 p. Price: Mimeo.- .25¢

CIOS XV - 7

Interview reported with Prof. Bacq, in charge of Belgian Medical C. W. Research. Brief discussion of Prof. Bacq's experiments on physiological action of vesicants "H, PS, CN and similar agents". Interview reported with Dr. Moritz Ney, Robert Thill, Dr. Keller and Dr. D'Huart. Dr. Ney and Thill were interested in anti-gas work, Dr. Keller was chief chemist at a plant making steel casings and Dr. D'Huart was chief chemist at a plant making HE and armor piercing shells.

CURTIS, FRANCIS J. I. G. Farbenindustrie A.G., Elberfeld & Leverkusen. Off. Pub. Bd., Report, PB 185. 1945. 11 p. Price: Mimeo.- .25¢

CIOS XXII - 16

Information is given on isocyanate polymers produced by these plants. Products called "Desmodurs", "Desmosits" and "Desmophens" with various suffixed letters and numbers are mentioned, preparation directions and structural formulas given. These materials are polymerized with polygels, etc. to form injection or molding plastics such as "Igamid U", which is described, or resinous adhesives such as "Polystal" used for plywood. Diisocyanates reacted with diols or other difunctional reactive groups to form infusible cross-linked products, useful as lacquers for wood, rubber, leather, paper, etc. The processes for making ethyl and benzyl cellulose and "Cellaprit" - cellulose acetate 50% water wet, are given in some detail.

CURTIS, FRANCIS J. and others. Miscellaneous chemicals - I. G. Farbenindustrie A. G., Elberfeld and Leverkusen. Off. Pub. Bd., Report, PB 200. 1945. 53 p. Price: Mimeo.- .50¢

CIOS XXIII - 25

This report deals chiefly with the plant at Leverkusen. The Elberfeld plant is mentioned only very briefly. The products made are listed, and capacities given. Production of the following miscellaneous chemicals are discussed in some detail. a. Acrylonitrile (acetylene and nitrile) b. Phosgene. c. "Porofor N"- a product soluble in Buna giving off N_2 during vulcanization to make a superior, small pored foamed rubber. Specific gravity of the product is 0.2 - 0.6. "Porofors DB and 254" are also mentioned. d. Chlorobenzene. e. Nitrochlorobenzene. f. Diphenyl (and polydiphenyls). g. Chlorodiphenyl. h. Salicylic Acid. i. Sodium Salicylate. j. Phenol. k. "Tanigans" - artificial tanning agents made from waste sulfide liquor. l. "Persistol" - a water repellent, mixture of Zr OCl_4 and paraffin emulsified with "Igepon". Said to be as good as Zelan and waterproof. m. "Mersolat" a suspending agent. At. Elberfeld, process and equipment for production of hexamethylotetramine is described. In appendices, the organizational set-up, processes in use, and a complete products list are given.

CURTIS, FRANCIS J., and others. Pharmaceuticals and insecticides at I.G. Farben plants, Elberfeld and Leverkusen. Off. Pub. Bd., Report, PB 237. 1945. 127 p. Price: Mimeo.- .75¢

CIOS XXIII - 12

This report together with Report, PB 246, "Pharmaceuticals at the I.G. Farbenindustrie Plant, Elberfeld, Germany: a supplementary report", presents the complete story of pharmaceutical research, products and operations at the I.G. Farbenindustrie plants at Elberfeld and Leverkusen. The subjects dealt with include sulfonamides and sulfones, antimalarials, remedies for tropical diseases, remedies for virus diseases, anesthetics - both general and local, antibacterial agents - penicillin as well as a new substance, dibromsalicil, described by Dr. Richard Kuhn of Heidelberg, hormones, vitamins, periston - a blood substitute, and a number of miscellaneous topics. The reports contain extensive data on Sontochin and the testing of other antimalarials, complete descriptions of such sulfonamides as Badional, Marfanil and Tibatin, methods for the preparation of synthetic oestrone, and Peristone, and finally an index of documents obtained at the I.G. Plant, Elberfeld.

CURTIS, H. A. Production and uses of calcium carbide in Germany. Off. Pub. Bd., Report, PB 217. 1945. 22 p. Price: Mimeo.- .25¢

CIOS XXV - 52

Quotes from several sources regarding situation in 1938, as of May 1942, the expansion then definitely scheduled, and final production goal set by the R.W.A., and developments since May 1942.

DEWEY, D. R. Wartime research on synthetic fuels: Kaiser Wilhelm Institut für Kohlenforschung. Off. Pub. Bd., Report, PB 289. 1945. 8 p. Price: Mimeo.- .10¢

CIOS XXI - 207

Research on the Fischer-Tropsch synthesis has been directed along the line of iso-paraffin synthesis. Good yields have been obtained at 300 atm. and 420-450°C over an alumina-thoria catalyst. Also reported are synthesis of aromatics and the use of zinc-oxide-alumina and iron catalysts.

FOGLER, M. F. and SMADEL, J. E. New liquid incendiary agent (ClF3). Off. Pub. Bd., Report, PB 166. 1944. 13 p. Price: Mimeo.- .25¢

Report on fluorine compound developed by Germans as liquid incendiary agent. Development of chlorine trifluoride requested by German army for use in shells against aircraft and tanks. A liquid with a boiling point of 12°C, is stable when stored in iron pressure cylinders. Substance combines with all organic and a number of inorganic compounds so vigorously that heat generated will generally cause material to burst into flame. ClF_3 not developed industrially, and probably never used by German army.

FOGLER, M. F. Production of Hydrazine Hydrate, I.G. Farben, A. G., Leverkusen, Germany. Off. Pub. Bd., Report, PB 186. 1945. 8 p. Price: Mimeo.- .10¢

CIOS XXII - 18

Hydrazine hydrate produced was for jet propulsion and rocket fuels. Equipment in good condition. Capacity 60 tons/ month. Complete sets of drawings and specifications for the plant are available. The process is described in some detail and a flow-sheet is given. A 95-98% solution is prepared. Concentrated NH_2NH_2. H_2O vapors are a little known blood poison. Leaks must be prevented, and good ventilation provided. Also acts as a skin poison. It is important to protect eyes from spray or mist of the solution.

FRASER, D. S. and others. Report on Alpine Chemische Werke A.G. Schaflenau, Nr. Kufstein, Austria. Off. Pub. Bd., Report, PB 375. 1945. 5 p. Price: Mimeo.- .10¢

CIOS EK 297

List of chemical and pharmaceutical products manufactured at these works and their uses. The principal product was aqueous hydrogen peroxide manufactured by the electrolysis of ammonium hydrogen sulphate according to the Riedel de Haen Process. The electrolysis was conducted continuously until the concentration of ammonium persulphate reached 200 gm/l. Then it was hydrolyzed in the presence of a small amount of sulphuric acid giving hydrogen peroxide. Distillation gave a product containing 2 to 3% of hydrogen peroxide, which was then concentrated by distillation to 30%. A small quantity (200 kg/day) was concentrated from 50 to 90% by a special method still under development. This procedure employed four stages of distillation operated at 50°C temp. and at 80,60,20 and 15 to 18 mm. pressure respectively. Stainless steel (V2A) or glass tubes were employed for the distillation.

GARVEY, B.S. Gustave Siegal A.G., Feuerbach near Stuttgart. Off. Pub. Bd., Report, PB 198. 1945. 5 p. Price: Mimeo.- .10¢

CIOS XXIII - 19

Description of processes of producing aluminum hydroxide pigment and silicate catalysts. The hydrated alumina pigment is produced by large scale titration of aluminum sulfate solution with sodium carbonate solution. Pigment reported to be as good for reinforcement as channel black and better for color. Research on magnesium silicate was incomplete although it is said to produce di-, tri-, and tetramers of isoprene or butadiene.

GORDON, K. I. G. Farbenindustrie, Frankfurt; chemical warfare. Off. Pub. Bd., Report, PB 16. 1945. 2 p Price: Mimeo.- .10¢

Brief description of new poisonous gas, a new material which goes through all known gas masks.

GORDON, K. Statistical data - I. G. Farbenindustrie - Hoechst. Off. Pub. Bd., Report, PB 14. 1945. 3 p. Price: Mimeo.- .10¢

This plant, having suffered no serious damage from bombing, is probably the largest potential producer of chemicals and drugs in Germany. The main items produced are: Organic and inorganic chemicals, organic chemicals from acetylene, plastics, textile dyes, azo colours, photographic dyestuffs and colours, textile auxiliaries, leather auxiliaries, emulsifiers for lubricants, anaesthetics, sedatives, hormon preparations, vitamins, chemotherapeuticals and anticeptics, synthetics, narcotics, serums and vaccines, veterinary pharmaceuticals, insecticides and fungicides. Paper lists prinicipal developments of war importance that have been done at this plant.

GORMLEY, W. G. Hydrogen peroxide - Electro Chemische Werke, Hollriegelskreuth. Off. Pub. Bd., Report, PB 215. 1945. 17 p. Price: Mimeo.- .25¢

Process of concentration of thirty-five (35) percent solutions to eighty (80) percent or higher, which makes possible the use of peroxide as an efficient fuel in submarines, rockets, rocket aircrat, etc. is explained in this report. Operating details of large scale plant for production of this high test peroxide at Hollriegelskreuth are given. Details of this process were given to the Japanese. Also a process for producing hydrogen peroxide economically through an electric discharge is outlined, including some costs of production. The third part of the report reviews German peroxide production potential.

CIOS XXV-1

HAENSEL, VLADIMIR. Kaiser Wilhelm Institut für Kohlnforschung, Mulheim. Off. Pub. Bd., Report, PB 284. 1945. 16 p. Price: Mimeo.- .25¢

Report on equipment and personnel of chemical laboratories and summary of research projects under investigation. A major research project has been the experiments on the Fischer-Tropsch synthesis, which was carried out partly in small glass or steel reactor tubes erected in an inclined position on normal laboratory benches and partly in rather semi-technical steel apparatus in the technical laboratory. Experiments have been conducted with ruthenium catalysts, cobalt catalysts, medium pressure catalysts, iron catalysts, and reports on methods and results in these experiments are given in this report. Other investigations included: work on iso-synthesis, aromatization, olefins in Fischer-Tropsch products, methylation, miscellaneous reactions employing aluminum chloride, preparation of alpha-olefins.

HAENSEL, VLADIMIR and COTTON, ERNEST. Plant of Chemische Werke Huls, Huls, Germany. Off. Pub. Bd., Report, PB 226. 1945. 8 p. Price: Mimeo.- .10¢

Description of a synthetic rubber plant using, as one of the principal materials, acetylene manufactured from natural gas. The plant was found practically intact when inspected on April 11, 1945. The acetylene, ethylene oxide, acetophenone, acetylene hydrogenation and ethylbenzene plants and processes are described generally. Ethylene oxide is processed to produce ethylene glycol and di-glycol is produced by recycling the glycol through the same reactor. Diethylbenzene is shipped to aviation blending stations under the code name of "Kybol".

HALL, C. C. and POWELL, A. R. Plant of Klocknerwerke, A.G. Castrop-Rauxel, Germany. Off. Pub. Bd., Report, PB 286. 1945. 12 p. Price: Mimeo.- .25¢

Description of Fischer-Tropsch synthetic oil plant, of the unit for the separation of coke-oven gas into hydrogen, ethylene, etc. and of a large "Koksofengas Spaltung Anlage", or a plant for the thermal cracking or reforming of coke-oven gas at normal pressure.

HALL, STANLEY A. Insecticides and fungicides at the I.G. Farbenindustrie plant, Hoechst. Off. Pub. Bd., Report, PB 360. 1945. 15 p. Price: Mimeo.- .25¢

CIOS XXVII - 4

Report of investigation of insecticides produced at Hoechst laboratories, particularly of a detailed investigation of "Gix", containing as an active ingredient 60% of 1-trichloro-2,2-bis (p-fluorophenyl) ethane. Members of Hoechst staff interpreted their results, obtained by generally poor testing methods, as unduly favorable to the performance of "Gix" as compared with DDT.
"Nirosan" containing 1,3,6,8-tetranitrocarbazole as active ingredient. "Dizan" containing N-(phenyldiazo) piperidine.
Fungicides investigated:

NAME	ACTIVE INGREDIENT
2317W	1-thiocyano-2, 4-dinitrobenzene
Brassicol and Tritisan 5	pentachloronitrobenzene
Bulbosan	1,3,5-trichloro-2,4,6-trinitrobenzene
Brassisan	1,2,4-trichloro-3,5-dinitrobenzene

HALL, STANLEY A. Insecticides, insect repellents, rodenticides and fungicides of I.G. Farbenindustrie, A.G., Elberfeld and Leverkusen, Germany. Off. Pub. Bd., Report, PB 252. 1945. 48 p. Price: Mimeo.- .25¢

CIOS XXVI - 78

The subjects covered in this investigation comprise primarily insecticides and mosquito repellents, but also include rodenticides, fungicides and one organic miscellaneous chemical. As much of the research at the Elberfeld and Leverkusen laboratories has been closely interlocking, the results of investigations in these two places have been combined in this report. The German scientists have had an active interest in the field of insecticides and insect-repellents, but it is difficult to evaluate their results short of subjecting them to experimental tests in the U.S. Two organic fungicides and two new organic rodenticides were uncovered which may have some value. A new non-toxic organic compound for testing the germination of seeds was

uncovered. This may be of use to seed specialists. This report should be read in conjunction with Off. Pub. Bd., Report, PB 240, "Manufacture of insecticides, insect repellents, rodenticides. I.G. Farbenindustrie, A.G., Leverkusen and Elberfeld".

HALL, STANLEY A. Report on insecticide manufacturers in Hamburg. Off. Pub. Bd., Report, PB 306. 1945. 2 p. Price: Mimeo - 10¢. CIOS ER 281

Lists the insecticide manufacturers, relating the condition of the factory of each and what each produces.

HANDLEY, E. T. & others The Leverkusen Works of I. G. Farben - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 193. 1945. 50 p. Price: Mimeo.- .25¢ CIOS XXIII - 4

Report deals with the Central Research Laboratory, and Buna N production at this plant. Documents on "Igetex", "Regenerat", plasticizers, and research reports of plant personnel etc. were removed. Description of the Laboratory is given in considerable detail with a list of personnel. A pilot plant "continuous tube polymerizer in which it was claimed that reactions had been carried out to 60% in as little as 15 minutes" is described in detail. Formulas and reaction conditions for Buna N rubbers made at this plant are tabulated. Equipment and processes are described. Production data and cost calculations are presented. The rubber testing and polymer evaluation work of the laboratory is described in considerable detail, and the tests performed are discussed. Polymerization research at this plant is outlined, and a list of materials tested for polymers and copolymers is given.

HANDLEY, E. T., and others. Synthetic rubber plant, Chemische Werke Hüls. Off. Pub. Bd., Report, PB 189. 1945. 125 p. Price: Mimeo.- .75¢ CIOS XXII - 21

Part I. gives information on condition of plant, personnel, general description of the plant and outline of operations. Part II. contains technical information. Hüls is the only plant in Germany which manufactures acetylene by the electric arc cracking of hydrocarbon gases. Acetylene is converted to acetaldehyde and butadiene is produced from the latter by the so-called aldol process. For styrene production, benzene is obtained from coal tar plants in the Ruhr and ethylene is produced at Hüls. Butadiene and styrene are polymerized continuously in emulsion to Buna S. Four types of Buna S have been produced at Hüls: Buna S, Buna SS, Buna SR, and Buna S3. Related organic chemicals including rubber softeners are also manufactured. Details of the butadiene, sytrene, and polymerization processes were obtained.

HASCHE, R. L. and BOUNDY, R. H. I. G. Farbenindustrie A.G. Fuer Stickstoff-Duenger Knapsack. Off. Pub. Bd., Report, PB 388. 1945. 7 p. Price: Photostat $1.00 - Microfilm .50¢

Description of capacity and production at plant mining and briquetting brown coal and generating power for the second largest calcium carbide plant in Germany. Products of chemical plant were: Calcium carbide, calcium cyanamide, acetylene, acetaldehyde, acetone, Acetone was produced by a vapor phase catalytic method in accordance with the following equation.

$$2\ CH_3COOH \rightarrow (CH_3)_2CO + H_2O + CO_2$$

HASCHE, R. L., and BOUNDY, R. H. The Oxo plant, Ruhrchemie Oberhausen-Holden. Off. Pub. Bd., Report, PB 390. 1945. 4 p. Price: Photostat $1.00 - Microfilm .50¢

The Oxo unit is adjacent to the Ruhrchemie plant at Oberhausen-Holden; a separate company called the Oxo Gesellschaft was formed sometime after 1938, and the stock is jointly held by Ruhrchemie, the I. G. and Henkel. The process is for the production of aldehydes and acids by the interaction of olefines and water gas, the products forming a very valuable class of detergents for synthetic fibres, being non-acid and non-alkaline. The process is briefly described and there is a sketch of the unit attached.

HOEFFDING, O. Statistics of German production, consumption and stocks of liquid fuels, rubber and strategic chemicals. Off. Pub. Bd., Report, PB 10. 1945. 16 p. Price: Mimeo.- .25¢

Pamphlet gives monthly statistics up to the fall of 1943 on the German supply situation with respect to liquid fuels, crude and synthetic rubber and selected strategic minerals. Included in liquid fuels are aviation gasoline, motor transport gasoline, motor transport diesel oil, diesel oil for the Navy, fuel oil for the Navy, production of aviation gasoline, motor transport gasoline production, diesel oil production, crude oil production in greater Germany. Figures on rubber include a survey of Buna and crude rubber supply position and crude rubber allocation quotas. Included in the figures on chemicals are toluol supply position, trinitrotoluol allocations, propellants position, propellants and explosives production and consumption by Wehrmacht, chemical warfare agents, T-stoff normal and T-stoff special.

HORACK, H. M., and others. Pharmaceuticals and insecticides at the I. G. Farbenindustrie plant, Hoechst a. Main. Off. Pub. Bd., Report, PB 241. 1945. 38 p. Price: Mimeo.- .25¢

This report deals with the activities of the pharmaceutical department of the I. G. Farbenindustrie plant at Hoechst a. Main, Germany. The subjects discussed are the chemotherapy of infections and neoplastic diseases, analgesics, vitamins and other pharmaceuticals. Appendices contain lists of the scientific staff of the plant, pharmaceutical preparations made at Hoechst, two articles on Rutenol and Nitroacridine (chemotherapeutic remedies developed for typhus), and photographs of the plant.

HORNE, W. A. and JONES, J. P. Fischer Tropsch Unit, Leipzig Gas Works. Off. Pub. Bd., Report, PB 294. 1945. 9 p. Price: Mimeo.- .10¢ CIOS XXVII - 68

Description, diagram and illustrations of the Fischer-Tropsch plant at the gas works of Leipzig, Germany, being installed for the purpose of enriching the town gas for the city of Leipzig and at the same time to yield much needed recoverable liquid and solid hydro-carbon products. The plant was of usual design for operation at low pressure on cobalt catalyst.

HOWARD, THOMAS W., and others. Pharmaceutical targets in southern Germany. Off. Pub. Bd., Report, PB 245. 1945. 17 p. Price: Mimeo.- .25¢ CIOS XXIV - 16

This report presents information on products and processes at the following chemical companies: Schering A.G., Berlin; Luitpold-Werk, Munchen-Thalkirchen; Alpine Chemische A.G., Kufstein, Austria; Chemische Fabrik Aubing, G.m.b.H., Aubing near Munchen; F. Hoffman-La Roche & Co., Grenzach, Baden. Schering research projects included work on hormones, new sulpha drugs known as Pyrimal and Globucid and unsuccessful attempts to produce penicillin and synthesize vitamin A. Luitpold Werk is a small factory manufacturing enzymes. Alpine Chemische A.G., owned by the Schering company, mixes and packages pharmaceutical products. Synthetic operations at this plant are the manufacture of salicylic acid from phenol by the Kolbe process, purification by sublimation and manufacture of pure sodium salicylate. Chemische Fabrik Aubing, G.m.b.H., owned by Schering and A.G. Hayl made the following synthetic products: acetylsalicylic acid, salicylic acid, salol, acetanilid, sulphonal, methylsulphonal, lactylphenetidine, acetanilid, veterinary products. F. Hoffman-La Roche and co., A.G. produced a variety of chemical products. A list of detailed chemical procedures obtained by investigators is given.

HUNTER, RALPH M. Dessauer Werke Fur Zucker Und Chemische Industrie, Dessau - Alcohol. Off. Pub. Bd., Report, PB 195. 1945. 4 p. Price: Mimeo.- .10¢ CIOS XXIII - 8

This plant produced alcohol from wood. Maximum monthly production was 480,000 liters 94% ethanol and 1,600,000 kg. lignin (50% solution). Albuminous material produced was first used as stock feed, later refined for human consumption. Lignin was sold for use in plastics, or was used for fuel. The process is briefly described.

HUNTER, R. M. The electrochemical industry, Burghausen area. Off. Pub. Bd., Report, PB 354. 1945. 38 p. Price: Mimeo.- .25¢

CIOS XXV - 21

Description of plant, equipment and processes at the following chemical factories: I. G. Farbenindustrie, Gendorf, producers of chlorine, hydrogen, ethylene, acetylene, Alexander Wacker Gesellschaft für Electrochemische, Burghausen, producer of chlorine, acetylene chlorination, calcium carbide, ferrosilicon; I.G. Farbenindustrie, Gersthofen, producer of chlorine and metallic sodium; Suddeutsche Kalkstickstoff Werke A.G. Trostberg, producer of cyanamide; Vereinigte Aluminum werke, Ranshofen; Vereinigte Aluminum werke, Toging; Vereinigte Aluminum werke, Pooking.

HUNTER, R. M. I. G. Farbenindustrie A. G., Leuna - Nitrogen fixation plant. Off. Pub. Bd., Report, PB 199. 1945. 5 p. Price: Mimeo.- .10¢

CIOS XXIII - 21

The synthetic ammonia plant is described in some detail. The apparatus is shown in a diagram, and the process outlined. Catalyst composition is also given.

INTERROGATION OF Dr. Muller Conradi, I. G. Farbenindustrie- Tetra ethyl lead-luboil-iso-octane. Off. Pub. Bd., Report, PB 9. 1945. 6 p. Price: Mimeo.- .10¢

Dr. Conradi, factory manager of the Oppau plant of I. G. Farben, was questioned on the following subjects: (1) Tetra Ethyl lead production in Germany and Japan. (2) Hydrogenation plants in Japan. (3) Methods of producing Synthetic Luboil. (4) Experimental work on paraffin waxes to be oxidized for the manufacture of soap. (5) Method of producing iso-octane. (6) Method of producing Oppanol, a polyisobutylene.

KERN, J.G., MURRAY, R.L., and SUDHOFF, R.W. I.G. Farbenindustrie A.G., Ludwigshafen and Oppau, Wehrmacht items. Off. Pub. Bd., Report, PB 385. 1945. 69 p. Price: Photostat - $5.00 - Microfilm - $1.00

Detailed report on processes and equipment in the manufacture of items for the Wehrmacht and in research undertaken for them at these two plants. Products produced at Oppau were: 1. H.T. 110 Tanol. 2. H.T. 300 (01-100). 3. Lubricants. 4. D.H.D. Benzine. 5. Paraflow. 6. Test motor fuels. 7. Wax 41a. 8. I.G. Wax S. 9. Self-igniting carbon or coal. 10. GM-1. 11. Dry ice. 12. Opponal B200. 13. Silical gel. 14. Hydrogen. 15. Zurdol. Products produced at Ludwigshafen included many organic and inorganic chemicals, among them: smoke acid (Nebelsaure); smoke powder; sodium sulfite; sodium cyanide; phosgene; liquid HCl; liquid ammonia; ethylene glycol; Glysantin, diethylene glycol; nitroalkanes; organic glass.

KERN, J. G., MURRAY, R. L. and SULHOFF, R. W. Rohm and Haas, Darmstadt, Germany. Off. Pub. Bd., Report, PB 227. 1945. 19 p. Price: Mimeo.- .25¢

CIOS - XXVI - 63

Visit in June 1945 to this plant. The types of products are pharmaceuticals, leather assistants and tanning agents, textile assistants, washing compositions, and plastics. Plastics are the most important, and a detailed discussion follows regarding plexiglas, plexigum, rohagite and other plastics. A list of Rohm and Haas products is given by name and a summary of sales from 1939 through 1944.

KLEIDERER, IRVIN C., RICE, JUSTUS B., and CONQUEST, VICTOR. Pharmaceuticals at the I. G. Farbenindustrie plant - Elberfeld, Germany: a supplementary report. Off. Pub. Bd., Report, PB 248. 1945. 141 p. Price.- $1.00

This report, together with Report PB 237, "Pharmaceuticals and insecticides at I. G. Farben plants, Elberfeld and Leverkusen", presents the complete story of pharmaceutical research, products and operations at the I. G. Farbenindustrie plants at Elberfeld and Leverkusen. The subjects dealt with include sulfonamides and sulfones; antimalarials; remedies for tropical diseases; remedies for virus diseases; anesthetics - both general and local; antibacterial agents-penicillin as well as a new substance, dibromsalicil, described by Dr. Richard Kuhn of Heidelberg; hormones; vitamins; periston - a blood substitute; and a number of miscellaneous topics. The reports contain extensive data on Sontochin and the testing of other antimalarials, complete descriptions of such sulfonamides as Badional, Marfanil and Tibatin, methods for the preparation of synthetic oestrone, and Peristone, and finally an index of documents obtained at the I. G. Plant, Elberfeld.

KRAUSSN, R. S. Dynamit AG., Duneburg - Substitutes for nitrated types of explosives. Off. Pub. Bd., Report, PB 62. 1945. 2 p. Price: Mimeo.- .10¢

Some information is given about Murol and Mansatz, two new types of explosives, which are substitutes for T.N.T. The plant Dynamit A.G. used the Barmag nitric acid process.

LEAPER, P. J. I. G. Farbenindustrie A. G. Plant Hoechst/Main. Off. Pub. Bd., Report, PB 183. 1945. 9 p. Price: Mimeo.- .10¢ CIOS XX - 11

Report on organic chemicals made in this plant. "Geserol" is I. G. trade name for D.D.T. "Fluor-Geserol" is difluorodiphenyltrichloroethane, in which 2 F atoms take the place of Cl atoms in the benzene nucleus. Also known as "GIX". Has lower m.p. than D.D.T., makes better emulsions and improved insecticidal properties, especially against mosquitoes. Detailed directions, flow sheets, etc. are in documents filed with MIRS. Organic chemicals and plastics manufactured are listed. Production of butanol or butyraldehyde by reduction of crotonaldehyde under differing conditions is mentioned, and methods are in documents filed with MIRS. "Uresin B" - a nitrocellulose plasticizer and emulsifier for other plastics was made by reacting butanol with urea and condensing with formaldehyde. "Igepons" - Sodium sulfonates of aliphatic glycols are mentioned. Tanning materials called "Tanigans" - Complex resins formed by condensing a phenol-formaldehyde reaction product with a complicated naphthalene sulfonic acid was prepared in a quantity of about 6000 tons in 1944. Production of glycerine from cheap sugars by hydrogenation is described.

LEAPER, P. J. I. G. Farbenindustrie Mainkur, Frankfort on Main. Off. Pub. Bd., Report, PB 179. 1945. 5 p. Price: Mimeo.- .10¢

Report of visit to plant chiefly engaged in dye manufacture including sulphur colors, vat dyes and azo dyes. Largest non-dye item was melamine which the plant used for the manufacture of plastics and lacquers, and also shipped to other I. G. plants.

LEAPER, P. J. I. G. Farbenindustrie Wolfen Farbenfabrik Wolfen Near Halle - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 20[illegible] 1945. 8 p. Price: Mimeo.- .10¢

CIOS XXV - 19

Rather superficial examination of a small section of a heavily bombed chemical plant. Plant was completely shut down at time. Principal products were inorganic and organic chemical compounds, dyes, and nitrogen products. Some chemical warfare materials were produced; also detergents and insecticides.

LEAPER, PERCY J. Schimmel & Co., Miltitz near Leipzig - Pharmaceutical production. Off. Pub. Bd., Report, PB 63[illegible] 1945. 3 p. Price:Mimeo.- .10¢

Report on operations during war period of Schimmel and Co., the largest plant in Germany devoted to the manufacture of synthetic aromatic chemical and natural products for perfumery and cosmetic industry, which included work on insecticides, some fractionation work such as refining of fusel oil, and manufacture of synthetic Menthol and essential oils (for Wehrmacht), a synthetic pharmaceutical, Menthyl Valesianate, used in air and sea sickness, and a number of synthetic chemicals, including Methoxy phenyl cinnamic acid, an intermediate for a tracer chemical used in making X-ray photographs of the gall bladder.

LIEBHAFSKY, H. A. Hydrazine hydrate (B-stoff) as a fuel. Off. Pub. Bd., Report, PB 24. 1945. 3 p. Price: Mimeo.- .10¢

Brief discussion of the use of hydrazine hydrate as an adjunct to the combustion process in the manufacture of hydrogen peroxide.

CIOS ER 48

LIEBHAFSKY, H. A. The manufacture of hydrogen peroxide. Off. Pub. Bd., Report, PB 20. 1945. 3 p. Price: Mimeo.- .10¢

Brief description of the production of hydrogen peroxide at the Elektrochemische Werke by the Pietzsch-Adolph process. "T-stoff" seems to have been derived from thymiol in three grades - TN, for general use, TS, for submarines, and TSS, for torpedoes.

LIVINGSTON, C. S., LEWIS, D. T., and MECHEL, E. R. Dynamit A.G. plant at Troisdorf. Off. Pub. Bd., Report, PB 317. 1945. 11 p. Price: Mimeo.- .10¢

CIOS XXVI - 3

Description of manufacture of high explosives (tetryl and P.E.T.N.) and of initiators and detonators (lead azide, lead styphnate, gasless delay fuze powder), filling method and electric match heads. This report also includes description of plastics moulded and manufactured and of the application of plastic materials to the manufacture of explosives.

McAULAY, J. and others. CIOS Trip No. 215 - 17th May to 12th June, 1945. Information on production of hydrogen peroxide - hydrazine hydrate and calcium permanganate. Off. Pub. Bd., Report, PB 60. 1945. 7 p. Price: Mimeo.- .10¢

CIOS ER 223

Detailed report on methods of industrial production of hydrogen peroxide, emphasizing high concentration (80-85%), quantity production, and improved methods, especially direct synthesis through electrical discharge; hydrazine hydrate; calcium and sodium permanganate.

McCARTHY, C.L. Adrenochrome - an interview with Dr. Demeter Buchnea. Off. Pub. Bd., Report, PB 47. 1945. 4 p. Price: Mimeo.- .10¢

Description of the method of preparation of adrenochrome from adrenalin, a drug which acts as a blood catalizer of sugar in the treatment of diabetes. No information on the clinical use of adrenochrome is given, although it is stated that it is not a substitute for insulin but acts as an adjunct to it.

McCARTHY, C. L. Chemical Research Laboratory of Dr. Bruno Bottcher, Kronach, Bavaria. Off. Pub. Bd., Report, PB 48. 1945. 2 p. Price: Mimeo.- .10¢

Brief description of the porcelain and plastic factories in which Dr. Bottcher is interested and of the chemical laboratory which he maintains for research on medical activities of the bi-products of the factories. Gives structure of one of the compounds of a new class of sulfurized organic compounds called "Trithiones". Other research activities are listed, namely: purification of Adrenochrome, purification and concentration of Penicillin by electro-osmotic diaphragm process, new method for production of plastics from Xylol (patent applied for) and a "one-step" method for production of synthetic rubber.

METCALF, H.B. Report on Hamburg Serum Works at Hamburg. Off. Pub. Bd., Report, PB 307. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 268

Lists the preparations made and the monthly production figure of each. Relates the recent history of the works, concluding that they are unimportant unless properly supervised. Samples were taken of the tetanus unconcentrated horse serum, the potency of which seemed high.

MOIR, G. A. A., WALKER, A. S., and HARRIS, J. M. I. G. Farbenindustrie, Bitterfeld; description of plant and production. Off. Pub. Bd., Report, PB 16. 1945. 3 p. Price: Mimeo.- .10¢

Brief description of the organization, personnel, plant production, and research carried on at this plant are given.

MOIR, G. A. A. and others. Interrogation of Dr. Klebert, Dr. Redies and Dr. Konrad of the I. G. Farbenindustrie (Bayer & Co.) at Leverkusen, target Nos. 8/12,22/2, 24/1) (production of chlorine, miscellaneous chemicals and insecticides). Off. Pub. Bd., Report, PB 91. 1945. 3 p. Price: Mimeo.- .10¢

The plant is divided into 4 sections: (a) inorganic products, including chlorine, etc. (b) intermediates, including polymerization to Buna S and N, etc. (c) dyestuffs, including insecticides and (d) maintenance, packing, etc. Subjects of special interest were synthetic rubber research, centralized at Leverkusen under Dr. Konrad, chemical warfare, charcoal, hydrazine (produced by a special method and believed to be used in connection with rocket bombs) and research amongst the following: Lauseto and Lausito-Neu, insecticides, and two products not yet produced which are resistant to fungal action and suitable for use in marine paints, new tanning products, new fungicides for impregnation of textiles, leather and wood, Santochin, and a nylon type substance.

MOIR, G. A. A. and others. Interview with Dr. Klebert, Jr. Redies and Dr. Konradi: synthetic rubber, chemical warfare. Off. Pub. Bd., Report, PB 15. 1945. 4 p. Price: Mimeo.- .10¢

Brief description of the plant and methods used at the I.G. Farbenindustrie plant at Leverkusen are given. Work here dealt with synthetic rubber, chemical warfare agents, such as hydrazine, insecticides, such as Lauseto and Lausetoneu, and drugs, such as Santochin.

MURRAY, H. L. Gebr. Giulini G.M.B.H., Ludwigshafen am Rhein. Off. Pub. Bd., Report, PB 223. 1945. 6 p. Price: Mimeo.- .10¢

CIOS XXVI - 47

Report of production processes and capacities for the following products: Al_2O_3; crystal soda ($Na_2CO_3\ 10H_2O$); calcined Al_2O_3; hydrate of alumina; quicklime; sodium aluminate; gas purification Fe_2O_3; aluminum sulfate; potassium alum; ammonium alum; ammonium superphosphate; potassium ammonium superphosphate; sodium fluo-silicate; sodium phosphate. The key product of Giulini's operation is the production of Al_2O_3 from bauxite by a combination of the Bayer and Pyrogen processes. Economics were claimed for this method, viz: (1) Na_2SO_4 was cheaper than Na_2CO_3. (2) The SO_2 could be recovered in the form of H_2SO_4. (3) The NaOH produced in the Pyrogen process could be used in the Bayer process.

OWENS, J. H. I. G. Farbenindustrie Leunawerke, Leuna. Off. Pub. Bd., Report, PB 82. 1945. 1 p. Price: Mimeo.- .10¢ CIOS ER 230

This report consists of a list of office records removed from the files of the Leuna Werke of the I. G. Farbenindustrie, for the years 1935 through 1944.

PECK, E. G., COTTON, ERNEST, and VON ELBE, GUENTHER. Uhde Gesellschaft Für Hochdrucktechnik, Dortmund und Bovinghausen, Germany. Off. Pub. Bd., Report, PB 68. 1945. 2 p. Price: Mimeo.- .10¢

Report on Friedrich Uhde, an independent chemical engineer until forced to combine with I. G. Farbenindustrie, and on his high pressure research laboratory and engineering offices. Only development he discussed was the reaction of methane and high pressure (5000 ats).

PHELPS, H. J. The N. V. Organon Pharmaceutical factory, Oss, Holland. Off. Pub. Bd., Report, PB 228. 1945. 27 p. Price: Mimeo.- .25¢

CIOS XII-24

This is a report of a visit to the N. V. Organon Pharmaceutical Factory at Oss, Holland. This factory had been under the control of Schering of Berlin throughout most of the occupation period, and had been an important center of manufacture for this concern after the bombing of their plants in the Berlin area. The report discusses new developments in vitamin, anti-louse powders, antibiotics, and antimalarials.

PHILIPPE, C. D., CHURCH, M. G., and RANSOM, D. Belgian plastics industry. Off. Pub. Bd., Report, PB 173. 1945. 21 p. Price: Mimeo.- .25¢

CIOS XVI-4,5

Three reports are included under this heading. I. Interview with M. Leon Wengler. He was the agent in Belgium for several German producers of molding powders. Brief statements are given regarding the manufacturers of the products with which he was familiar. II. Interview with M. Julian Linet, director and manager of Professional Group of Moulders in Belgium. Discusses chiefly this groups activities under German occupation. III. Interview with M. F. Schryvers, head of Plastics Section of the Office des Produits Chimiques in Brussels. This interview deals also with conditions during German occupation. A list of Belgian moulders with capacity and specialties is given in an appendix.

PRYOR, M.G.M German plastic developments. Off. Pub. Bd., Report, PB 298. 1945. 3 p. Price: Mimeo.- .10¢

CIOS ER 353

Visit to Homogenholzwerk "Holig", a factory financed by F. W. Brugmann and Son at Baiersbronn, the factory being new and never having been in production. Among the processes and products were: Homogenholz (wall board); moulded products; low-density material called "Schaum-holz"; materials for stabilized skins including "Tronal" made of layers of fine glass fabric impregnated with a phenolic resin; and other resins.

QUIRK, R. N. C.I.O.S. investigation of Ruhr synthetic oil, etc. plants; preliminary progress report. Off. Pub. Bd., Report, PB 17. 1945. 9 p. Price: Mimeo.- .10¢

A brief description of the condition and work carried on at several plants interested in synthetic oils, etc., is given. A brief summary is also given of the technical work carried on, such as: Preparation and purification of synthesis gas; Catalyst ovens; Catalysts; Method of operation of the process; The "O x O" process for the treatment of C_{12} - C_{17} olefines to produce aldehydes; Coal hydrogenation; The Pott-Broche process and the use of pitch; Vapour phase hydrogenation; The D.H.D. process for dehydrogenation napthenes to the spirit to aromatics; Use of propane and butane; Carbonisation and gasification; Lurgi pressure gasification process; Krupp-Lurgi low temperature carbonisation process; Brown coal low temperature carbonisation by the so-called "Spurgas" process; Coke ovens; Hard coal tar and Brown coal tar.

RICHARDSON, R.E. C.H. Boehringer Sohn, Ingleheim am Rhein, Germany. Off. Pub. Bd., Report, PB 249. 1945. 7 p. Price: Mimeo.- .10¢

CIOS XXVI-9

A brief report on this pharmaceutical firm discussing products and specialty pharmaceuticals. It is stated specifically that antimalarials were not made. In normal times Boehringer extracted theobromine from cacao wastes, which was methylated to the trimethyl derivative, caffeine. Boehringer's production of synthetic caffein was made by the standard Traube synthesis.

RICHARDSON, R. E. and others I. G. Farbenindustrie A. G., Hochst am Main. Off. Pub. Bd., Report, PB 218. 1945. 84 p. Price: Mimeo.- .50¢

CIOS-XXVI-11

The Hochst plant, manufacturers of organic and inorganic chemicals, plastics and dyes, is described in some detail. This includes a description of the Chlorine and Methane Chlorination Plants and the Acetaldehyde Division. Processes are outlined for the production of sodium sulfide, monochloroacetic, sulfuric, and chlorosulfonic acids, synthetic tanning agents, vinyl acetate, polymers from vinyl acetate, the "Polyurethanes", also known as "Superpolyamides" and also (debatedly) "Nylons", synthetic carbazole, used for dyes and insecticides, and glycerogen, a substitute for glycerine. Insecticidal compositions made at the plant are listed. Tables show properties, compositions, etc. of acid proof cements. Information secured on commercial applications of vinyl polymers in glues, paints, food preserving, safety glass, cloth impregnation, artificial leather, and extruded tubing is given. There is also some information on pharmaceuticals and medicinals made at Hochst and their application. Photographs and diagrams are scattered throughout the report.

RICHARDSON, R. E. and others. I. G. Farbenindustrie A.G. Hochst am Main, Germany - Wehrmacht items, miscellaneous chemicals. Off. Pub. Bd., Report, PB 206. 1945. 48 p. Price: Mimeo.- .25¢

CIOS XXV-18

Information is given on the following products; 1. Aluminum chloromethyl - a mixture of $AlCl_2CH_3$ and $AlCl(CH_3)_2$ (method of preparation given). Use- substitute for phosphorus, and as a Griguard agent. 2. Nitrous Oxide - used as fuel booster for planes. 3. Luminous paint pigment. 4. Smoke screen agent. 50-50 wt mixture of chlorosulfonic acid and sulfur trioxide. 5. Tetranitromethane, an explosive. Continuous process of preparation from acetylene is given in some detail. Lab. production of 10 kg/day attained in excellent yield. Properties described. 6. Infra-red camouflage dyes. 7. Mustard gas protectives. Three promising compounds are reported. 8. Products glowing in u.v. light if exposed to mustard gas. 9. Jet propulsion fuels. Diketene plant is described. 10. Bullet-proof glass. 11. Foodstuff preservatives. Basic idea was to coat foodstuffs with a polyvinylacetate film. 12. Anti-tank mines. 13. Self igniting cushion for landing field defense, to ignite on contact with airplane wheels. 14. Fire extinguisher. Chlorobromomethane plant and process described. 15. Black powder substitute. Tetranitrocarbazole and tetranitrodiphenylaminesulfone sodium picrate and trinitro-N-ethylaniline. 16. Explosive intermediate. $(H_2C{=}N - SO_3K)_3$ called "Weissalz". 17. Products to prevent radar sound wave detection of U-boats.

SCHADE, H. A., FORAN, E. and ALDRICH, R. C. The Fischer-Tropsch process. Off. Pub. Bd., Report, PB 373. 25 p. Price: Mimeo.- .25¢

I. Inspection of Fischer-Tropsch Plant at Harnes(Lille) France. Capacity 48 tons/day. Producing 36 tons/day (288 U. S. bbl.) due to Co shortage. Produces gasoline of octane rating-50. 25% of product is diesel fuel of very good quality - cetane no. of 90 or above. Heavy wax made is used in paints, varnishes and polish. Butane gas is bottled at 300 p.s.i. for gas driven autos. Process is described in considerable detail. Design of cooling system of the reactors is discussed. Yields are (volume %): gasoline 60, diesel fuel 22, solid wax 10, gaseous products 8. II. Translation of prisoner of war, Ernst Nagelstein's report on Fischer-Tropsch Process with special consideration of the Lutzkendorf Plant of the Wintershall Co. Discusses selection of feedstock and site, describes the process, and lists industrial and scientific concerns interested in the development of the synthesis. Discusses possible developments of the process. III. Manufacture and regeneration of catalyst. This is discussed in some detail.

SCHATZEL, R. A. and WHITE, W. L. Hackethal Draht Und Kabelwerke A.G., Hanover - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 212. 1945. 11 p. Price: Mimeo.- .25¢

CIOS XXV-32

This was one of the principal manufacturers of bare and insulated cables in Germany. Plant considerably damaged. Brief description of equipment and processes in rolling mill, enamelling, rubber and plastics insulating. Formulas and mixing procedure given for insulating compounds.

SCHATZEL, R. A. and WHITE, W. L. I. G. Farbenindustrie Laboratory, Leverkusen (miscellaneous chemicals). Off. Pub. Bd., Report, PB 214. 1945. 9 p. Price: Mimeo.- .10¢ CIOS XXV - 34

This report is a follow-up to check on specific products mentioned in another report. "I-Gummi" is a thermoplastic with good strength narrow temp. range. It is a long chain polyester of adipic acid and di-isocyanate, with glycerine and glycol (1:30 on mole basis). Formulas for various plasticizers used as Buna S softeners are given. A short description of various Bunas (12 of them) is given, including copolymer ratios and some physical characteristics. Bunas suitable for cable insulation are discussed.

SCHWARZ, EUGENE E. Medical supplies plant of Drs. Degan and Kuth, Duren. Off. Pub. Bd., Report, PB 231. 1945. 5 p. Price: Mimeo.- .10¢ CIOS XXIII - 6

Report of investigation of successful bombing of factory making dressing materials, bandages and cotton, ointments, sulfonilamide, and certain cardiaca and Valeriana preparations. No documents or supplies found.

SEYDEL, PAUL V. and SEEMILLER, J. C. Chemical installations in the Cologne Area. Off. Pub. Bd., Report, PB 17 5 1945. 23 p. Price: Mimeo.- .25¢ CIOS XXIII - 1

Plants were visited to obtain basic information on the materials being manufactured. I. Deutsche Gold - Und Silberscheideanstalt Werk Knapsack. Produced Cl,Na, some $CaCl_2$ and heat treating salt mixtures. Processes and equipment described and some cost data given. II. Sachtleben, AG, Offices. List of correspondence files found in premises on various chemicals given. III. A.G. für Stickstoffdünger Fabrik. Produced CaC_2, $CaCN_2$, acetic acid, acetaldehyde, acetone, acetic anhydride and ferrosilicon. Plant considerably damaged. Equipment and processes briefly described. IV. Rheinische Friedrich-Wilhelms-Univeristy. V. Deutsche Gold - Und Silberscheideanstalt, Werk August Wegelin. Produced carbon blacks for rubber, paper, cement, paints and other purposes. Capacity 10-12 tons per day. VI. C. F. Boehringer & Sons Offices. VII. Westdorp and Wehner, Made glass photographic plates.

SKEY, A. J., and NIELSSON, K. T. Dr. Julius Walter Reppe acetylene chemistry. Off. Pub. Bd., Report, PB 21. 1945. 2 p. Price: Mimeo.- .10¢

Brief discussion of the following developments:

1. Reduction of acetylene requirement for butadiene
2. Development of synthetic blood plasma - Periston
3. Development of the tackifier, Koresin, a polymerized isobutyloxysterol, for Buna.
4. Development of Densodrin, polyvinyloctodecylether, for leather treatment.
5. Production of cyclopolyolefines from acetylene.

SMADEL, JOSEPH E. and others. Chemical Institute of Phillips University - University of Marburg. Off. Pub. Bd., Report, PB 182. 1945. 8 p. Price: Mimeo.- .10¢ CIOS XX - 10

Reports interviews with 3 members of the chemical faculty. Indication of experimental work on polymerization of alkalene oxides. Information about use of H_2O_2 (called "T-Stoff") in 80-85% strength for use in torpedoes briefly mentioned by Dr. Wilhelm Jost. Prof. Hans Meerwein stated he found new catalysts to convert pinene to camphene en route to synthetic camphor. These are thoric or tungstic acids and are used at 180°C.

SMADEL, JOSEPH E., and others. Institute für Fleckfieber- und Virusforschung des O.K.H. Off. Pub. Bd., Report, PB 242. 1945. 16 p. Price: Mimeo.- .10¢ CIOS XXV - 5

History of this institute for spotted fever and virus research; description of present buildings, staff, typhus vaccines, animals available for laboratory use and laboratories. Techniques of production of louse typhus vaccine, mouse lung typhus vaccine, yolk sac typhus vaccine, yellow fever vaccine, and rabies vaccine are described. Appendices include an analysis of typhus vaccines prepared at the institute and a list of articles by Dr. Herman Ever who has done much investigation in virus diseases and developed a rapid aggluturation test discussed in this report. Also included in this report are the description of a laboratory at Schwarzenfeld and an underground hospital at Nürnberg.

SMADEL, JOSEPH E. Interview with Dr. Engelbertz of Chemische Fabrik Greisheim Elektron (I. G. Farbenindustrie-Greisheim). Off. Pub. Bd., Report, PB 180. 1945. 4 p. Price: Mimeo.- .10¢ CIOS - XX - 4

Plant produces, intermediates for dyes, pharmaceuticals and explosives, electrodes of carbon, flotation chemicals such as Na-,K-, C_2H_5-, isopr.-, bu-, and bz-xanthates, (K-ethylxanthate is oxidized to the disulphide (dixanthagen) which is used to impregnate clothing for control of body lice), "bonderizing chemicals", paint and varnish dryers, metallic potassium (used as a catalyst for buna polymerization), boron carbide, (used for abrasives), and welding gases and equipment.

SMADEL, JOSEPH E. Laboratory studies of typhus vaccines prepared by Behringwerke, I.G. Farbenindustrie, Marburg, Germany. Off. Pub. Bd., Report, PB 244. 1945. 4 p. Price: Mimeo.- .10¢ CIOS - XXIV - 14

A report on samples of typhus vaccines prepared from infected rabbit lung and infected yolk sacs of embryonated eggs. The samples prepared from rabbit lung had little detectable complement fixing antigen of typhus. In contrast the yolk sac vaccine had good quantities of this antigen. The results of complement fixation studies on the vaccines are presented.

SMADEL, JOSEPH E., and CURTIS, FRANCIS J. Manufacture of insecticides, insect repellents, rodenticides., I. G. Farbenindustrie A.G., Leverkusen and Elberfeld. Off. Pub. Bd., Report, PB 240. 1945. 12 p. Price: Mimeo.- .25¢ CIOS XXIII - 20

A report on the manufacture of insecticides and related products. It deals with Lausets-old, an analog of DDT and other DDT types, giving preparation and methods of use. This report should be read in conjunction with Off. Pub. Bd., Report, PB 252, "Insecticides, insect repellents, rodenticides and fungicides of I. G. Farbenindustrie A.G., Elberfeld and Leverkusen".

STRICKLAND, O. W. French and Belgian explosives establishments. Off. Pub. Bd., Report, PB 315. 1945. 18 p. Price: Mimeo - 25¢. CIOS XXII - 2

Detailed description of methods of production and uses of the following items produced by I. G. Farbenindustrie A. G., Höchst Am Main for the Wehrmacht: Aluminum chloromethyl (methyl stoff); Nitrous oxide (GM-1); Explosive intermediate (Weissels); Luminous paints; Substitute for black powder in propellants (Treibsätze); Smoke-screen agent (Nebelsäure); Oil substitute (Steuerol); Tetra nitro methane (K-stoff); U-boat program; Infra-red camouflage (Infra-rot tarnung); Cloth treating agents to resist mustard gas (Selloxine); Product for detection of mustard gas in the dark; Fuel for jet propulsion (Sondertreibstoff); Bullet proof glass (Panzerglas); Protection of foodstuffs (Lebensmittel-Konservierung); Anti-tank mine (Haftmine); Landing field defense - Self igniting cushion (Brandkissen); Chlorobromomethane (Feuerloschmittel CB).

STRICKLAND, O. W. Intermediates for explosives production, I. G., Ludwigshafen. Off. Pub. Bd., Report, PB 314. 1945. 7 p. Price: Mimeo.- .10¢

There is listed the materials supplied direct to the German Army by I. G. Ludwigshafen. There are given methods of production of the following intermediates which were issued to other factories for conversion into explosives: pentaerythritol, dinitro diphenylamine, ethlene diamine dinitrate or PH-Salz, and the insecticide known as Lauseto, prepared by the action of chloral upon a mixture of benzene and chlorobenzene, having one less chlorine atom than DDT. Col. Strickland also visited Lampaden, 10 miles S.E. of Trier, and saw ramps from which rockets may have been launched.

SUDDHOFF, R. W. I. G. Farben, A.G. - Griesheim Elektron, Frankfurt Am Main - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 202. 1945. 7 p. Price: Mimeo.- .10¢

CIOS XXIV-19

Report on products and special processes at this plant, Hydrogen, oxygen, nitrogen and acetylene were produced and distributed; also by-product neon and argon were produced, principally for electric lamp usage, and also some krypton and helium. Acetylene generators were fabricated. Griesheim introduced the first hydrogen welding equipment sold under the name "Autogen". Carbon for electrode manufacture for electrochemical operations was produced by the special coking of coal. The Organic Division's work was the production of intermediates for dyes and other uses. Operations comprised nitration, amidation and chlorination steps, following conventional schemes. A complete list of the products made is given in an Appendix to this report. Process of nitration and the production of meta dichlorobenzene and benzidene are described in some detail.

SUDHOFF, H. W. I. G. Farbenindustrie A. G., Mainkur Works, Fechenheim. Off. Pub. Bd., Report, PB 203. 1945. 9 p. Price: Mimeo.- .10¢

CIOS XXIV-21

Report of visit to plant of I. G. Farbenindustrie. Primarily a dyestuffs plant though recently considerable efforts have been made in the manufacture of intermediates for plastics and resins. Among the processes briefly described are those for producing Melamine or Asamine E, Maprenal MJB, Benzoguanamine, Maprenal BG, Kaurit MKP, (used as a treating agent for rayon), and phenothiazine.

SWANSON, A. A. Manufacture of Phlegmatized P.E.T.N. at Fabrik Zur Verwertung Chemischer Erzeugnisse G.M.B.H. Wolfratshausen. Pub. Bd., Report, PB 320. 1945. 8 p. Price: Mimeo.- .10¢

The process of Wolfratshausen (30 kilometers south by west of Munich) for manufacture of phlegmatized pentaerythritol tetranitrate (P.E.T.N.) is given. The steps in the process are: nitration, washing, recrystallization, phlegmatization and drying.

TARR, P. R. Chemical plant, Dr. Alexander Wacker, Gesellschaft fur electrochemische industrie combit, Burghausen, Bavaria, Germany; Chemistry laboratory, laboratory removed from I. G. Farbenindustrie AG, Ludwigshafen, to Carl Freudenberg AG, Mullheimentalstr., Weinheim, Germany. Off. Pub. Bd., Report, PB 29. 1945. 1 p. Price: Mimeo.- .10¢

Brief information on the manufacture of chemicals, solvents and plastics from the fundamental base of acetylene, together with the uses of plastic raw materials, primarily for surface coatings.

TARR, P. R. Gasilling plant and munitions dump, near St. Georgen, Bavaria; Anorgana BmbH werke, Gendorf Bavaria, Germany. Off. Pub. Bd., Report, PB 30. 1945. 2 p. Price: Mimeo.- .10¢

This is a modern gas filling plant which is elaborately equipped to fill artillery shells, mines and aerial bombs. Facilities are available for mixing agents and to thicken vesicants before filling into munitions. Data were obtained on organization of the German war effort and on a number of chemical processes, particularly for mustard gas and its raw material, as well as on the future plans of I. G. Farbenindustrie AG for the development of chemicals from acetylene.

TOWNSEND, J. R. Dr. Richard Gotthold Vieweg, professor, Technische Hochschule, Darmstat, 6 Gall Road, St. John's Wood, London. Off. Pub. Bd., Report, PB 51. 1945. 1 p. Price: Mimeo.- .10¢

A test method for Q of dielectrics, mentioned by Prof. Vieweg, is briefly described. Substitute materials with which he had worked or was familiar are listed, namely: low pressure molded materials consisting of mixtures of phenol formaldehyde and sawdust; field wire insulation of extruded polyvynl chloride; Lupolen - a polyethylene; mixtures of thiokol and waxes for submarine cable insulation; Plystyrene insulation stabilized from crazing by narrow band of polimers; silicone cement for cementing teeth to dentures; and two synthetic rubbers, Polyurettian and Polyisocyanides.

TURNOCK, L. C. Henkel and Cie A. G., Dusseldorf - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 216. 1945. 10 p. Price: Mimeo.- .10¢

Principal subsidiaries and products; capital investment and present appraised worth; number and classification of employees; principal products, productive capacities, and unit costs; raw materials and sources; electrical energy, coal, water and steam requirements with costs; general sales policy and distribution of products of Henkel & Cie, G. A. as of June 25, 1945. The plant and equipment are practically undamaged. Essentials of the processes of manufacture of sodium perborate and synthetic glue are given.

TURNOCK, L. C. Werke Kchelyte Leulsdorf. Off. Pub. Bd., Report, PB 221. 1945. 10 p. Price: Mimeo.- .10¢

CIOS XXVI-33

Description of plant, products, raw material sources, processes, energy requirements, unit costs, distribution and sales policy. Products made were: chlorine, hydrogen, sodium hydroxide, potassium hydroxide, hydrochloric acid, calcium chlorate, calcium chloride, aluminum oxide and chromium oxide abrasive powders and mixes, magnesium oxide.

VOLWILER, E. H. Information on a material possibility used for in jet propulsion. Off. Pub. Bd., Report, PB 4. 1945. 1 p. Price: Mimeo.- .10¢

Brief description of the manufacture of hydrazine hydrate possibly used for jet propulsion, or rocket fuel, or both.

VOLWILER, ERNEST H. Investigations by Professor Kuhn, Kaiser Wilhelm Institut Für Medizinsche Forschung. Off. Pub. Bd., Report, PB 243. 1945. 6 p. Price: Mimeo.- .10¢

CIOS - XXIV - 13

More information is given on cyclodecapentaene. (See P.B. 1 and P.B. 5) Formula given as $C_{12}H_{12}$ (?). Had an inky-blue color reminiscent of the azulenes from camomiles. Absorption spectra also similar. Cyclo-octatetraene was found to be toxic and ineffective against the B. coli group. Cyclodecapentaene was not toxic to rats in 0.5 - 1 g doses. Product minimizes effects of mustard gas burns. Research on Vitamins A, E, Bg and rutin, is mentioned. Large doses of E may prevent and cure fatty degeneration of the liver. Dibromosalicil works well against Staph albus infections, 300 times as effective as English Ca - penicillin. Various other halogen derivatives are mentioned as having possible specific action against various organisms. Thiopheme and furane derivatives are also briefly mentioned in this connection. A proteolytic enzyme obtained from molds similar to Penicillium notatum is briefly mentioned. It is used to aid protein digestion. Product called "S-206". May have some value as a constituent of cleaning preparations to remove spots from clothing.

WATSON, H. E. Spangenburg Werke Schnachenburg Allee, 153 Hamburg; water resisting varnishes. Off. Pub. Bd., Report, PB 34. 1945. 2 p. Price: Mimeo.- .10¢

Imported sulphate pulp residues are purified and worked up into resin acids which are usually esterified. The process is comparatively new, and is analogous to the development of improved varnishes from shellac now taking place in England. The crude raw material is decomposed with sulphuric acid, washed and thoroughly dried. This product contains about 50% resin acids and is known as Rohtalloel. Rohtalloel is distilled giving 80% "Talloel". Talloel is esterified with glycerin, or glycerin substitutes. This produces a product which forms rather slow drying but very waterproof films. Talloel and its esters has not been considered as good as linseed oil and should be regarded only as a substitute.

WEIR, H. M. Gesellschaft für Linde's Eismachinen Hollriegelskreuth. Off. Pub. Bd., Report, PB 368. 1945. 31 p. Price: Mimeo.- .25¢ CIOS XXVII - 55

Report of visit to Linde Company, near Munich, which makes equipment covering the entire field of temperatures below normal. Emphasis on commercial manufacture of oxygen (and nitrogen) and on the low temperature separation of hydrocarbon gases. Distinguishing features of the design of the plants is that heat recovery is widely practiced. Descriptions of processes for liquefaction of air, ammonia production, and separation of hydrocarbons. Contains eleven diagrams.

WEIR, H. M. and NEWMANN, L. L. Die Staatliche Materialprufungsanstalt An Der Technische Hochschule - Fuels and lubricants. Off. Pub. Bd., Report, PB 287. 1945. 18 p. Price: Mimeo.- .25¢ CIOS XXV - 24

This is a report of interviews with personnel at this institution. The work done on lubricant additives to increase allowable bearing loads is discussed. All the work had been directed toward organic phosphorus compounds. A thesis "Preparation of phosphorus compounds and their use in lubricants" by Gerd Muller, dated 12-1-44 is said to be an excellent summary of work done, and is to be microfilmed. Structural formulas of the additives are tabulated. In addition several tables of experimental results using these additives are given. Photographs of the test apparatus are included.

WHITE, LESTER M. Deutsche Gold und Silber Scheide Anstalt, Degussa, Frankfort/Main. Off. Pub. Bd., Report, PB 181. 1945. 10 p. Price: Mimeo.- .10¢ CIOS XX - 9

The main offices of Degussa and the adjoining offices of its subsidiary Holzverkohlungs-Verein (Hiag) were visited and information obtained about the following: sodium cyanide and potassium cyanide, other metal cyanides, sodium cyanate, sodamid, sodium metal, potassium metal, beryllium metal, lithium metal, Degesch, carbon black, ceramic materials and refractories, hydrogen peroxide, and other peroxygen compounds. Sodium cyanide was used in case hardening and heat treating of steels, production of acetone cyanhydrin used in production of Plexiglas, and for silver plating of airplane engine bearings. Sodium cyanate was used for production of Dulcin, a sweetening agent, and Aminopyridine was made from sodamid and converted to Eubasin for use as a substitute for quinine-camphor solution in the treatment of tuberculosis and kidney diseases. Photographs show condition of the offices.

WHITE, LESTER M. and others. Interview with Dr. Oskar Loehr, I. G. Farbenindustrie A. G. Frankfort on Main. Off. Pub. Bd., Report, PB 178. 1945. 6 p. Price: Mimeo.- .10¢ CIOS - XX - 2

Dr. Loehr's replies were short and evasive. A brief, general report is given on materials prepared for Buna S and N production, sodium, chlorine and chlorinated hydrocarbons, acetylene derivatives, DDT, and hydrogen peroxide.

WHITE, T. N. Report on Leuna, Leunawerk, subsidiary of I. G. Farben (Target No. 28/6.04). Off. Pub. Bd., Report, PB 90. 1945. 3 p. Price: Mimeo.- .10¢

The examiner found that about 90% of the files had previously been removed. He further removed c.40 reports of research projects - on plastics, cathylitical problems and organic combinations, to Dentine. A list of key research men at the plant is included in the report.

WHITTAKER, H. W. Report on visit to Cave used for storage of hydrogen peroxide. Off. Pub. Bd., Report, PB 323. 1944. 11 p. Price: Mimeo.- .25¢ CIOS IV - 2

Detailed report on a cave near Vaas in which hydrogen peroxide and permanganate had been stored: Description of the chambers; examination of valve from pump casing; examination of 2" plug-cock from main pipe line; examination of samples of peroxide and permanganate.

WINSLOW, CARLILE P. Prof. Dr. Alfred Schmid, Konstanz, and Holig Homogenholz Werke G.M.B.H., Baiersbronn. Off. Pub. Bd., Report, PB 355. 1945. 14 p. Price: Mimeo.- .25¢

Personal data on Prof. Alfred Schmid (electro chemistry specialist), owner of the "Holig" factory, in which synthetic wood, resins, glues were produced; finished products were flooring and cowling for aircraft. The report gives few technical details and is largely limited to Schmid's personal and business connections.

WOLDENBERG, MAX and WHITE, LESTER M. Production of concentrated hydrogen peroxide solutions, Bad Lauterberg (Hartz) Off. Pub. Bd., Report, PB 197. 1945. 31 p. Price: Mimeo.- .25¢ CIOS XXIII - 18

Description of plant and technical information on production and properties of concentrated hydrogen peroxide used by the Germans in auxiliary devices for launching airplanes, V1 and V2 bombs, naval torpedoes, jet propelled planes and unmanned tanks. Operations of the plant are divided into these four steps:
1. Electrolysis of ammonium bisulphate to form ammonium persulphate solution. 2. Conversion of ammonium persulphate to potassium persulphate crystals by reaction with potassium bisulphate, with regeneration of the ammonium bisulphate. 3. Hydrolysis of the potassium persulphate with live steam and rectification of the resultant H_2O_2- H_2O vapors to produce 30-40% H_2O_2, with regeneration and purification of the potassium bisulphate. 4. Concentration of the 30-40% H_2O_2 solution to 80-86% by vaporization and rectification under vacuum in special equipment. This step is new and the entire process is described in detail in this report. Research on peacetime uses of hydrogen peroxide, especially expansion of its chemical uses, had not yet begun. Report contains photographs of plant and layout and flow sheet diagrams. Recommendations for the future use of the plant and the product are given.

ELECTRICAL MACHINERY, EQUIPMENT, AND SUPPLIES

ASSESSMENT REPORT. Off. Pub. Bd., Report, PB 103. 1945. 4 p. Price: Mimeo.- .10¢

Report on the condition, equipment and documents and their disposal, of the Degaussing Laboratory, Physikalische Institute, University of Tübingen. In a Bericht presented by Dr. Piesche, describing the experimental arrangement and outlining the researches the following are included: the Helmholtz coil, the magnetometer of the Flux-gate type, demagnetizing coils, one a solenoid and the other the Droppel-U, MES-Coils, three magnetic ships models and Sperrbrecher research. Two articles on the magnetic amplifier are mentioned and it is pointed out that the best type of mu-metal developed by Siemens for transductors is designated as "Werkstoff 1040 (Siemens)".

BARKER, G. C., ROBSON, J. M., and ABSON, W. Report on Talstation Lofer. Off. Pub. Bd., Report, PB 145. 1945. 3 p. Price: Mimeo.- .10¢ CIOS ER 201

Work of the Talstation up to the end of 1944 was along these lines; production of high intensity sound and its effect on human beings; a controlled rocket, radio and the infrared cell being used for control.

CARMICHAEL, D. Interrogation of Dr. George Otto Erb, at Maria Veen a 5660, near Coesfeld, Electric detonators - types of fuzes. Off. Pub. Bd., Report, PB 132. 1945. 7 p. Price: Mimeo.- .10¢ CIOS ER 146

Dr. Erb worked in his own laboratory along such lines as: high speed electrical detonators, electric time and percussion fuzes using igniters and heat elements, base fuze with percussion and fixed delay, rocket propulsion devices, explosive propulsion for flying bombs, rocket propulsion for aircraft.

DINGLEY, E. N., JR. German Sonne navigational air radio station. Off. Pub. Bd., Report, PB 153. 1945. 4 p. Price: Mimeo.- .10¢

CIOS XII - 8

Very brief description of a German radio station in Bresles, France, which had been almost completely destroyed by bombing.

DYER, C. L. Activities of Dr. Hans Erich Hollman - Radar, signals communications. Off. Pub. Bd., Report, PB 155. 1945. 8 p. Price: Mimeo.- .10¢

Interview with Dr. Hans E. Hollman, and Dr. Max Bense, German scientists, on April 22, 1945. Carried on laboratory research in fields of color film, stereoscopic film, and other film techniques. Also theoretical and experimental work in short wave transmission, measurement of efficiency of induction heating apparatus, ultra sensitive vibration demonstration equipment and other scientific research.

DYER, CARLETON L. Organization of Telefunken Radar, Signals Communications, Optical Devices. Off. Pub. Bd., Report, PB 308. 1945. 43p. Price: Mimeo - 25¢.

CIOS XII - 1

Report on the organization and work of Germany's largest firm in the radio and television fields: Tables of organization, list of location of plants, list of key personnel.
Special discussions: (1) Artificial radar target; (2) artificial radar panorama targets; (3) lighthouse tubes; (4) cathode ray screen materials; (5) crystal detectors; (6) microwave tube research.

DYER, CARLETON L. Radar and communications targets in Belgium, Eindhoven and Aachen. Off. Pub. Bd., Report, PB 157. 1944. 55 p. Price: Mimeo.- .50¢

Reports visits to Radar School, Ghent, Aachen Technische Hochschule, and various firms and factories in Belgium engaged in manufacturing radar and communications equipment, and information obtained regarding personnel, activities of the firms, condition of the target, types of equipment found, etc.

FRIEND, R. G. The Luftwaffe Signal School, Köthen. Off. Pub. Bd., Report, PB 378. 1945. 18 p. Price: Photostat $2.00 - Microfilm .50¢

The school was badly damaged and looted before the investigating team arrived. The establishment layout is described. Investigation of the laboratories indicated that the work done was chiefly concerned with evaluation and study of British and U. S. equipemt, Radar equipment, which was mostly damaged, is described. Several plates and drawings of this equipment are included.

GREATBATCH, A.R. X-ray apparatus and radiological activities in France. Off. Pub. Bd., Report, PB 273. 1945. 6 p. Price: Mimeo.- .10¢

CIOS XIII - 11

Very brief reports on 5 French firms engaged in the manufacture of X-ray and radiological equipment.

GRIGGING, RAVENEL and HOLD, F. R. Drs. Kleen & Lerbs, Target No. C 1-633. Off. Pub. Bd., Report, PB 59. 1945. 2 p. Price: Mimeo.- .10¢

Information obtained from Dr. Kleen, head of the Telefunken Tube Research laboratories and from Dr. Lerbs, in charge of the Magnetron group, regarding centimeter tube development. These men had diagrams (construction) of magnetrons, klystrons, and grounded grid triodes, mostly experimental.

GUTEHOFFNUNGSHÜTTE, Sterkrade/Ruhr electrodes. Off. Pub. Bd., Report, PB 109. 1945. 4 p. Price: Mimeo.- .10¢

This plant produced electrodes (lightly coated and heavily coated). Details on a new coating formula are given in this report.

HABICHT, H. H. Hauptausschuss Elektrotechnik (list of underground plants of the electrical industry). Off. Pub. Bd., Report, PB 87. 1945. 3 p. Price: Mimeo.- .10¢

Contains list of construction jobs, almost all underground, supervised by Fritz Borho, loaned since 1942 to the Main Committee for Elektrotechnic - planning group - under Lueschen. List, as of Feb. 1945, gives name of contracting firm, location of the underground or evacuated plant and the code word of the enterprise. Borho explained the system in giving code names to underground plants.

HANSELL, C. W. and MACFARLAN, A. G. Report on private laboratory of Prof. Vierling. Off. Pub. Bd., Report PB 303. 1945. 3p. Price: Mimeo - 10¢.

CIOS ER 206

Visit to laboratory of Prof. Vierling at Feuerstein, on a hill above Ebermannstadt, north east of Forchheim, Prof. Vierling being professor of Fernmeldetechnik at the T.H., Hanover. The work done here was on speech communication systems known under the names of Gleichlauf, Anna, Baustein, and Nacht fee; the standard appeared to be that of a high class amateur group.

HARSLEY, CAPERTON B. German X-ray and electro-medical industry. Off. Pub. Bd., Report, PB 336. 1945. 14 p. Price: Mimeo.- .25¢

Report of inspection of Siemens-Reiniger-Werke A/G, Rudolstadt, largest European manufacturer of X-ray tubes and valve tubes for X-ray equipment; of Siemens-Reiniger-Werke A/G Erlangen, manufacturer of X-ray apparatus and other electro-medical equipment; and of Metallgussgesellschaft, Bolitz-Ehrenberg, producer of light metal castings for aircraft engines as well as X-ray equipment. Statistics of production and lists of X-ray manufacturers, physicists, radiologists, and X-ray clinics are given. Technical developments, trends and practices in the design and construction of X-ray tubes and valve tubes and in X-ray and other electro-medical equipment are summarized and German sources of supply for raw materials are enumerated.

HORSLEY, CAPERTON B. Hamburg, Fuhlsbuttel, Rentgenstrasse 24. Off. Pub. Bd., Report, PB 302. 1945. 3p. Price: Mimeo - 10¢.

CIOS ER 174

Visit to C.H.F. Muller, A.G. in Hamburg where there were designed and manufactured various X-ray tubes and housings and the "Cascade" high voltage generator for deutron acceleration. In addition they were to start production of a magnetron, designed by Telefunken; they had constructed an experimental 2 M.V. betatron and another 15 M.V. betatron. The recommendation is made that the plant be permitted to resume manufacture of medical X-ray equipment.

HORSELY, CAPERTON B. Siemens-Rheiniger-Werke A/G. Erlangen (15 Kilometers north of Nurnberg)--X-ray apparatus. Off. Pub. Bd., Report, PB 55. 1945. 3 p. Price: Mimeo.- .10¢

Outlines types of information obtained and items removed for further examination and study from this plant, which designs and manufactures X-ray apparatus and other electro-medical equipment, the largest plant of its kind in Germany. X-ray tubes, superior in certain respects, to tubes now being manufactured in the United States.

HELLER, M. F. Signal communication targets in Brussels. Off. Pub. Bd., Report, PB 331. 1945. 14 p. Price: Mimeo.- .25¢

Account of a visit by the M.I. 8 representative on the CIPC Target Mission, relating to the guarding of targets, the demolitions carried out on signal targets, the booby traps, and the safes and strong boxes.

HOLT, F. R. and others. C.H.F. Muller, A.G., Target No. 1/132 e, X-ray equipment. Off. Pub. Bd., Report, PB 115. 1945. 4 p. Price: Mimeo.- .10¢

CIOS ER 63

Report on C.H.F. Muller firm, subsidiary of the Phillips organization, manufacturer of X-ray equipment. Details concerning infra-red tubes built into mobile sets and used in army tanks were revealed by Dr. Hans Ritz, Director of Research. Infra red receivers and searchlights made "seeing in the dark" possible. Chief military applications: night attacks by tanks, aircraft detection, naval gunnery control at night. Range of the set was 10-15 Km when relying on radiated heat. Ritz also stated that he had done research work in connection with splitting the atom.

HORNER, W. A. Funk Versuchungs Anstella für Kriegsmarine Pelzerhagen near Neustadt, north of Lubeck. Off. Pub. Bd., Report, PB 299. 1945. 1 p. Price: Mimeo.- .10¢

CIOS ER 77

Description of the establishment which test all operational radar equipment for the German Navy, develops transmitters, conducts underwater acoustic research and other matters. There is listed also associated research station.

HUNT, G. L. TE KA DE electric valva factory - C. F. Weiss textile mills, Helmbrechts; Siemens Halske telephone equipment factory, Hannerman mills, Asch Czechoslovakia. Off. Pub. Bd., Report, PB 26. 1945. 2 p. Price: Mimeo.- .10¢

Brief description of the work being carried on in these two factories. Te Ka De electric valve factory is entirely engaged in the manufacture of radio receiving valves. Types being made:-RG12D60 2T2, RL12T15. This type of valve manufacture is of conventional design. The main occupation of the Siemens Halske telephone equipment factory is the manufacture of 4-channel carrier telephone equipment with a frequency range up to 29 ks/sec. A subsidiary occupation was the manufacture of measuring equipment, e.g., wavemeters, attenuators, etc., for telephone or carrier-telephone frequencies, although some of the wavemeters covered S-band work and decimeter wavelengths. In connection with the S-band work, magnetrons and klystrons were being used experimentally. The magnetrons were of the split-anode type suitable for local oscillator use, and the klystrons were copies of the British types.

HUNT, G. L. Telefunken, C. R. tube laboratory and factory, Bad Liebenstein; A.E.G. research labs., Electronic valve application laboratory and factory, Clausthal-Zellerfeld; E. Leybold's Nachfolger Laboratory, Berg academy, Clausthal -Zellerfeld. Off. Pub. Bd., Report, PB28. 1945. 2 p. Price: Mimeo.- .10¢

At the Telefunken, C.R. tube laboratory and factory, research and development was carried out on electron optics, cathodes, CRT screens, photo-electric effects and secondary emmission. Double layer screens were produced as well as potassium chloride screens. It was intended that water-cooled valves, types LRS 250, RS255 and RS 257, and magnetron type LMS 100 to be put into production at the A.E.G. research labs., Electronic valve application laboratory and factory. Development work at the E. Leybold's nachfolger laboratorium, radio and physics laboratory was done on radio sondes for German army and navy and infra-red receivers. Brief description of the work is given.

HUNT, G. L., HACHEMEISTER, C. A. and BORGARS, S. J. Electronic valve (tube) factories - Helmbrechts and Minden. Off. Pub. Bd., Report, PB 154. 1945. 17 p. Price: Mimeo.- .25¢ CIOS XXIV - 26, 27

Description of two German radio tube factories, including data on the plant, types of tubes manufactured, special processes, documents found. Photographs.

INSTITUTE FUR Theorie der Elektrotechnik A.D.T.H., Stuttgart. Off. Pub. Bd., Report, PB 81. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 226

Brief account of research projects at the Institute for Electrotechnic Theory; (1) Dr. Bader, mathematician, worked on network and filter problems, machine solutions of equations. (2) Dr. Breitlung worked on magnets, particularly hysterisis measurements, magnetic suspension of materials. (3) Dr. Kessler worked on D.C. amplifiers. No details are given.

KOLKS, R. H., RIDDLE, J. M. and HACHEMEISTER, C. H. Report on Physikalisch-Technische Reichsanstalt at Weida and Zeulenroda, Thuringen. Off. Pub. Bd., Report, PB 69. 1945. 3 p. Price: Mimeo.- .10¢

Brief report on war research activities of German organization, the equivalent of the U. S. Bureau of Standards, including organization chart. At Zeulenroda, where high frequency laboratories are located, measurements were made on materials for absorbing electromagnetic radiation, namely Eisenpane and Moltspren. Magnetrons were designed and constructed for use in search receiver design and in frequency measuring experiments, centrimetric radiators were studied and designed, research was conducted on the design of search receivers and valves, etc.

McLEAN, F. C. Television in France. Off. Pub. Bd., Report, PB 333 1944. 5 p. Price: Mimeo.- .10¢

CIOS XI - 1 (Item 9)

Report on television equipment in the laboratories of COMPAGNIE De COMPTEURS at Montrouge and in the studies of RDF near the Eiffel Tower.

MENARD, J. Z. German research and development in the radio station. Off. Pub. Bd., Report, PB 152. 1945. 31 p. Price: Mimeo.- .25¢

Report of an investigation of two Black List Targets in the Lyon Area, of the production facilities of several French factories, and an attempt to obtain available information about German research and production in the field of Radar and controlled-missiles. Major observations: (1) Development of important equipment not intrusted to French by Germans. (2) Lyons laboratories of Le Materiel Telephonique developed several radar, pulse telephony, and pulse telegraphy equipment, not, however, up to Allied Standards. (3) Some information obtained on German radar activities. (4) Specifications for a number of German tubes listed. (5) location of German manufacturers and radar organizations listed.

MERTZ, P., TOWNSEND, J. R. and McCARTHY, R. H. Phillips underground valve plant, Porta, Westfalia (target No. C-1/678). Off. Pub. Bd., Report, PB 89. 1945. 1 p. Price: Mimeo.- .10¢

Report on examination of Phillips underground plant to obtain information on equipment and methods used in manufacture of valves and electric control spools for glider missiles. Production appeared to have been set up solely for the P-8000 tube, a miniature pentode, Grids, cathodes, heaters, plates and button type stems are made in the plant

MULLET, L. B., RAMM, E. T. and WAYNE, E. Report on Fernmeldetechnisches Entwicklungslaboratium and interrogation of Dr. H. Kimmel. Off. Pub. Bd., Report, PB 76. 1945. 3 p. Price: Mimeo.- .10¢

CIOS ER 202

Account of work being done by Kimmel at Olching (near Munich). He was mainly concerned with design and small-scale production of test and measuring gear; RC oscillator, pulse and signal generators, high frequency attenuator, absorption wavemeters, Diode voltmeters, calibrated receivers. Other problems worked on by Dr. Kimmel were: a proposed AL aerial system; direction finding system known as "Susel"; regulated output receivers; indicator for 50 c/s phase difference measurements; and a time modulation system.

HUTTING, D. C. Establishments CRA-Grandin M. Chauchat, Metox - Radar. Off. Pub. Bd., Report, PB 151. 1944. 7 p. Price: Mimeo.- .10¢

Brief reports of inspection of two French firms manufacturing radio equipment under German contracts. The Cra-Grandin firm manufactured an amplifier believed to be intended for Ultra-Sonic equipment and a receiver type R 600 built to German specifications. No work was done on Radar or any equipment involving pulse technique. The Metox firm manufactured various transmitter and receiver equipment for the German army and navy. This firm manufactured equipment from German blueprints and did no actual laboratory work for the Germans.

PALMER, C. M. and HEPBURN D. Vereinigte Bayrische Telefonwerke, A.G. Off. Pub. Bd., Report, PB 75. 1945. 3 p. Price: Mimeo.- .10¢

Condition and description of contents of medium sized factory making standard telephone equipment. Attached is a list of service equipment made by the various factories of Siemens & Halske.

PARROTT, JOHN A. Siemens & Halske, Technical Bureau, Hamburg (sales and service actually). Off. Pub. Bd., Report, PB 74. 1945. 1 p. Price: Mimeo.- .10¢

Lists officers and manufacturing plants of Siemens and Halske.Technical data of general character on Siemens Carrier, and voice frequency repeaters, and photographs of coaxiyl cables used for radio purposes were obtained.

RADFORD, A. S. Messrs. Steeg and Reuter - Bad Homburg. Off. Pub. Bd., Report, PB 309. 1945. 7 p. Price: Mimeo - 10¢. CIOS - XXV - 13

Report of condition of laboratories, wartime activities and technical developments of Steeg and Reuter, firm engaged during the war almost exclusively on the production of piezo electric crystals for frequency control and for pressure measurement devices. Rock salt prisms and polarisation equipment for infra-red experiments have also been produced. Shortage of good quartz led to the development of methods for the most economical use of the material. Methods of determining the electrical axis of crystals and method of construction of wafer crystals are described.

RAMM, E. T. and MULLETT, L. B. Interrogation of Professor W. O. Schumann of the electro-physical laboratory, Munchen Beu. Off. Pub. Bd., Report, PB 93. 1945. 5 p. Price: Mimeo.- .10¢ CIOS FR 262

Interview with W.O. Schumann, professor of theoretical physics. Discussion of pulse generating circuits, gas discharge tubes, especially oscillations in plasma and gas discharge phenomena at low pressures.

REEVES, A. H. The Antenna Research Station belonging to Thekriegsmarin Establishment N.V.K. (Pelzerhaken and Sonderberg) Off. Pub. Bd., Report, PB 301. 1945 1 p. Price: Mimeo - 10¢. CIOS FR 135

The village of Bokel, near Rendsburg (Schleswig) is the location of this field station for antenna research. It is a broad band (15 to 50 m.) antenna system capable of giving a beam between 10 and 35 deg. (total) width (depending on the wave length) and capable of being rotated electrically to receive from any direction.

REEVES, A. H. Dr. Dohler, late of Hamburg University (theoretical physicist) (experiments with spark-gap pulse transmitters, etc.) Off. Pub. Bd., Report, PB 60. 1945. 3 p. Price: Mimeo.- .10¢

Reports work of Dr. Dohler leading to a prototype model of a spark-gap transmitter working reasonably well down to a wavelength of 60 cms. If his claims are true (probably the case) he has a practical spark transmitter for certain applications both in R.C.M. and for radar transmission.

REEVES, A. H. Nachrichtenmittelversuchkommando, Funkversuchsstelle, Pelzerhaken (Neustadt - Radar Research & Development Establishment of German Navy). Off. Pub. Bd, Report, PB 58. 1945. 3 p. Price: Mimeo.- .10¢ CIOS ER 136

Report on the evacuation center for the principal Navy radar research and development establishment. German radar apparatus was found to be well designed and well engineered but the question of "Centimeter radar" had not been solved by Germany. Details are given concerning magnetron, modulation system, antenna system, scanning system, receiver, wavemeter for 10 cms., experimental magnetron, etc.) Also details on the 3 cm technique and the technique from 2.0 to 1.6 cms.

SNOWDEN, M., REDGMENT, P., and WHITMER, R. M. Interview with Dr. Oskar Heil, Konstanz research in velocity-modulated oscillator tubes. Off. Pub. Bd., Report, PB 95. 1945. 4 p. Price: Mimeo.- .10¢ CIOS ER 265

Report on Dr. Oskar Heil's research in velocity-modulated oscillator tubes. Special data on the R.E/4-101, particularly its cavity design, electron focussing and the most desirable beam in electron optics. Heil's techniques for studying electron optics are described in detail. Special discussion of energy spectrum of electrons in the beam, transit time resonance, operation of an amplifier, positive ion focussing.

SOUTHERN, R. W., and COVENTRY, A. J. SS Oberabschnitt Nordsee Hamburg, Harvestehudeweg 8 a. Off. Pub. Bd., Report, PB 300. 1945. 2p. Price: Mimeo - 10¢. CIOS ER 300

Two charts, giving the lay-out of the SS systems of radio communication.

SPROULE, R. S., PETERSON, V.W., and PATTISON, R.R. Investigation of gas turbine and jet propulsion work in Paris. Off. Pub. Bd., Report, PB 266. 1944. 28 p. Price: Mimeo.- .25¢

While results of the investigation were mostly negative in the gas turbine and jet propulsion field, points of interest obtained by Engine team of "T" force on visits to factories, caves, etc., in the Paris area were: Exhaust-driven turbo-superchargers on Heinkel 274 at Farman factory; the Electro-mechanique built, Brown-Beveri design, exhaust driven turbo-superchargers, mounted on the Hispano-Suiza Y.51 (12Y) engine; the Rateau turbo-superchargers; a machine used by Gnome et Rhone for machining shrouded supercharger impellors from a forging; a petrol driven starter motor to fit a standard eclipse flange designed by Air Equipment; tail assembly and ailerons in the H.I.P.A. Factory; a German atomic H.2 welding process called "Arcaton", details available at Societe de Soudure Autogene C. Francaise; etc. Appendix II comprises a list of documents and materials procured for further study. A visit to Paris gives amplification of points of interest to M.A.P. namely: A double fuel system developed for the 801 engine; a method of finning B.M.W. 801 cylinders with light alloy strip; a method of chrome plating the bores of 801 cylinders; details of the Messerschmitt P.8 propeller hub; bakelite propeller mounting cones developed by Ratner; and an exhaust turbine supercharger from the B.B.603 H.E. 274 installation of Farmans.

STEVER, H. GUYFORD. Radar and electronics targets, Cologne and vicinity. Off. Pub. Bd., Report, PB 310. 1945. 35 p. Price: Mimeo - 25¢. CIOS XXVIII - 3

Detailed reports on information obtained as a result of visits to twenty-nine establishments formerly engaged in radio and electronic production or research. These included industrial firms and universities. Most noteworthy is the report on the infra-red experiments undertaken at the Physikalische Institut, University of Bonn.

WAYBURN, EDGAR Report on the Siemens-Reiniger Werke A/G at Erlangen. Off. Pub. Bd., Report, PB 305. 1945. 3 p. Price: Mimeo - 10¢.
CIOS ER 270

A description of the plant of the largest manufacturer of X-ray and other electro-medical equipment in Germany. Present output is less than 20% of prewar output. Mass radiographic apparatus (35 mm and 80 mm) examined. Investigator feels that 6 or 7 years ago Siemens-Reiniger manufactured mass miniature radiographic apparatus was superior to anything else in the world, but at present it lags behind British or American apparatus in most respects except for the lens.

WHITMER, R. M. and SNOWDEN, M. Report on Physical Department of University of Strasbourg at Seefeldom. Off. Pub. Bd., Report, PB 77. 1945. 2 p. Price: Mimeo.- .10¢
CIOS ER 203

Detailed account of Dr. Offo Brandt's research in supersonics, particularly supersonic direction of torpedoes.

WHITMER, R. M. and others. Report on Forschungs Anstalt der D.R.P. Post Dienstelle. F. Off. Pub. Bd., Report, PB 78. 1945. 3 p. Price: Mimeo.- .10¢

This report discusses work of the laboratories on television, control of glide bombs, electron multipliers, klystrons, magnetrons, and Hela (broad band intercept receiver).

WIEMANN, HERMAN and others. Targets in Mulhouse. Off. Pub. Bd., Report, PB 363. 1945. 12 p. Price: Mimeo.- .25¢

Summary of information obtained at Dolfuss-Weig Company, Mulhouse and at additional firms in Mulhouse manufacturing machine gun feeders, electric cable connections for antiaircraft guns, electric motors, uniforms, medical supplies, mm. guns, torpedo tails, heavy trucks, radio parts, relays for U-boats, 105 mm. shell cases, fuel injection pumps for Diesel motors.

WILLIAMS, JAMES H. Interrogation of Dr. Carl Bosch: Cathode screens, Selenium dry rectifiers. Off. Pub. Bd., Report, PB 67. 1945. 3 p. Price: Mimeo.- .10¢

Report on research work of Dr. Bosch on cathode ray screens, Selenium dry rectifiers, high tension insulators and machines, and biology incidentally. Contains some information on results of oral use of certain salts for treatment of rheumatism.

WORDEN, L. R., and DROGE, H. Radio Sonde transmitters Wurt Radio G.M.B.H., Stuttgart and Neuhausen. Off. Pub. Bd., Report, PB 379. 1945. 6 p. Price: Mimeo.- .10¢
CIOS XXVIII - 20

Description of radio Sonde transmitter developed by Germans just before the end of the war but never in production. In addition to relaying usual signals for barometric pressure, temperature and humidity, it permitted measuring of wind velocity without the necessity of following the balloon with a theodolite. Device has only 2 tubes and a conventional Radar station can be used as a ground station. Pamphlet includes wiring diagram and original German description.

FABRICATED METAL PRODUCTS (EXCEPT ORDNANCE, MACHINERY, AND TRANSPORTATION EQUIPMENT)

BRIGHTMAN, HARRISON M., and others. Deutschs Edelstahlwerke- Krefeld, Germany. Off. Pub. Bd., Report, PB 352. 1945. 20 p. Price: Mimeo.- .25¢
CIOS XXV - 38

Complete layout of this steel mill, with buildings named is given in a drawing and attached list. The organization is described, and the various parts of the plant and equipment are discussed in some detail. Products made at this plant were high alloy steels only. Chemical specifications are given for steels produced. A stock list of materials on hand is also presented.

BRIGHTMAN, H. M. Gebrüder Bohler A. G. Buderich - Metallurgy. Off. Pub. Bd., Report, PB 351. 1945. 28 p. Price: Mimeo.- .25¢

Detailed report on the steel works Gebrüder Bohler, Buderich, manufacturer of high quality steels, steel tools, and forgings. Main items of production: Aircraft and diesel engine cylinder sleeves, armor-piercing shell steel, gun barrels, orabon tool steel, welding wire and electrodes, nitriding steel, high speed steel.
Personnel employed: 4000
Topics covered in the report: (1) Powder metallurgy (hard cemented carbides), (2) The research laboratory. Equipment and main types of research are listed. (3) Raw materials and electric furnace steel melting (4) Ingot preparation prior to rolling on forgoing. (5) Heating for rolling and forging. (6) Rolling mills. (7) Forge shop. (8) Heat treatment. (9) Machine Shop. (10) Spring Shop. (11) Cold Finishing Shop. (12) Apprentice School. (13) Analyses and monthly tonnage figures of products under normal operations (14) List of steel-making raw materials. (15) A graph showing the rise and fall of production during the war years.

BRIGHTMAN, HARRISON M., and others. August Thyssen Hutte, A.G. - Hamborn. Off. Pub. Bd., Report, PB 353. 1945. 26 p. Price: Mimeo.- .25¢
CIOS XXVI - 32

Report on an important steel plant, which had suffered considerably from bombing.
Items discussed: Open hearth furnaces, basic Bessemer converters, electric furnaces, rolling mills, raw materials, by-products.
The plant produced ingots and rolled steel.

BRIGHTMAN, HARRISON M. and others. Friedrich-Alfred-Hutte at Rheinhausen-Metallurgy. Off. Pub. Bd., Report PB 349. 1945. 22 p. Price: Mimeo.- .25¢
CIOS XXIV -10

Report on one of the steel works of the Krupp Corporation, producing semi-finished material (including billets, slabs, and sheet bar), railroad accessories (rails, sleepers, tie plates, fish plates), shapes (beams, channels, angles). bars (rounds, squares, flats, hexagons).
Information given: Personnel, extent and condition of plant, raw materials, coke ovens, sintering machines and screening plant, blast furnaces, basic Bessemer converters, open hearth and electric furnaces, surface conditioning, rolling mills, statistics on production, raw materials, inventory, etc.

BRUMER, SAMUEL Underground factory sites in Ansbach. Off. Pub. Bd., Report, PB 71. 1945. 5 p. Price: Mimeo.- .10¢

Reports inspection of seven underground factories in Ansbach, giving location, condition, description of contents, etc. One report deals with a special independent laboratory for tests and experiments in light metals conducted by Eugen Berblinger.

COLCLOUGH, T. P. Burbach Eisenhutte, Saarbrucken - Metallurgy. Off. Pub. Bd., Report, PB 346. 1945. 8 p. Price: Mimeo.- .10¢

The steel works at Burbach consist of coke ovens, blast furnaces, Thomas and Martin plants, and rolling mills -- all for the manufacture of carbon steels. These works and their use are described. There is also an account of the recovery of vanadium.

COLCLOUGH, T. P. Roehling'sche Eisen Und Stalwerke G.M.B.H. Off. Pub. Bd., Report, PB 347. 1945. 26 p. Price: Mimeo:- .25¢

Dr. H. Roehling has headed this company with the main works being at Volkingen in the Saar, near Thionville, and the Roehling works near Wetzlar. The works are a good example of an integrated operation from ore preparation and manufacture of coke to the finished steel product, the capacity of each operation per year being given in an

appendix. During the war the production of the Martin and electric furnaces has been practically confined to the production of alloy steel. This production for the years 1936 to 1944 is given in a table.
Recent major developments are the manufacture of guns and steel castings, the cold-rolling of strip, the finishing of bars. Other developments: desulphurisation of liquid pig iron by the use of liquid soda ash; recovery of vanadium from pig iron; improvement of coke oven gas by the Still process; development of the all-basic Martin or O. H. Furnace.

COLECLOUGH, T. P., AND SIMPSON, J. Steel making in Belgium and Luxembourg during German occupation. Off. Pub. Bd., Report, PB 345. 1944. 20 p. Price: Mimeo.- .25¢ CIOS XII - 21

Steel production in Belgium during the German occupation is summarized. Detailed production records are said to have been collected by Major Harrison for the Economics division of SHAEF. Very little special quality steel of any type was made. Manufacture of H.P.N. (Hamborn, low P, low N steel made in Basic Bessemer converter) is described in some detail. Typical analyses are given as follows:

C	Mn	S	P	N
0.05	0.34	0.022	0.043	0.008
0.04	0.28	0.025	0.037	0.009

Test procedures on this steel are described and results given. A list of uses for H.P.N. steel is also included. Recovery of Vanadium from pig iron is extensively discussed. The manufacture of shell steel is briefly indicated. Steps taken by the Germans to conserve Mn are briefly mentioned.

HUNTER, R. M. The electrochemical industry, Bitterfeld area. Off. Pub. Bd., Report, PB 204. 1945. 26 p. Price: Mimeo.- .25¢ CIOS XXIV - 22

A general description of plants in this area is given. Production of magnesium, aluminum, magnesium alloying and fabrication, alkali and chlorine is given in detail, with processes, yields, capacity and equipment completely described. Production methods and equipment for production of alkali chlorates, graphite, metallic calcium, phosphorous (red and yellow), potassium bichromate, potassium permanganate, barium metal and bearing metal alloys are given also, but in briefer form.

LINK, ALBERT E. Synthetic Mica Process-Ostheim, Germany. Off. Pub. Bd., Report, PB 184. 1945. 4 p. Price: Mimeo.- .10¢ CIOS XXII - 11

Synthetic mica has been produced by the KWI Ceramics Institute (Forschungsgemeinschaft für Keramik, Glastechnik und Emailtechnik). The best synthetic mica is as good as natural mica. The mica blocks carry the same cleavage characteristics as natural mica. The general summary and technical details of the process are given.

McCARTHY, R. H. and others. Report on Osnabruck Kupfer und Kabel Werke KlosterStrasse, 29. Off. Pub. Bd., Report, PB 304. 1945. 3p. Price: Mimeo - 10¢. CIOS ER 207

Report on telephone and telegraph products, espesially wire manufacture, rolling, drawing, insulating and quadding or pairing, stranding, sheathing. German practice appears to be lower in quality and quantity than good American and British practice. The only unique nature was lack of annealing of copper wire at any stage.

MOTT, B. W. Aluminum Woerwerke, Erftwerke, Gravenbroich. Off. Pub. Bd., Report, PB 348. 1945. 8 p. Price: Mimeo.- .10¢

Detailed description of a plant for the production and recovery of aluminum: (1) Electrolytic production of aluminum from bauxite, (2) Production of anti-radio-location strip, (3) Recovery of swarf and dross, (4) Recovery of aluminum alloys from wreck aircraft.

REPORT ON (1) Drahtwerke Eidelstedt (C-22-1013a) (2) Rheinische Draht Und Kabelwerke (C-22-1013b). Off. Pub. Bd., Report, PB 72. 1945. 2 p. Price: Mimeo.- .10¢

Report on Drahtwerke Eidelstedt, manufacturers of iron wire and screen and Rheinische Draht Und Kabelwerke, who draw and fabricate cable, bare-rubber, and high voltage paper insulated cable. A plastic extrusion machine for insulating three wires at a time is described in some detail.

SCHATZEL, R. A. and WHITE, W. L. Felten & Guilleaume Carlswerke, Cologne - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 210. 1945. 5 p. Price: Mimeo.- .10¢ CIOS XXV - 30

This is one of the largest electric companies in Germany. This plant has two divisions, 1. "Copper and Cable" and 2. "Iron and Steel". The copper plant includes a refinery and rolling mill where copper, aluminum copper alloys and copper clad steel is rolled. Rolling practice is described. The wire drawing department is briefly discussed, and the materials used for wire insulation given, with formulas for compounding.

SCHATZEL, R. A. and WHITE, W. L. Land Und Seekabelwerke - Cologne - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 213. 1945. 7 p. Price: Mimeo.- .10¢ CIOS XXV - 33

This plant produced insulated wire and cable. Mixing directions and formulas are given for insulating materials.

SCHATZEL, R. A. and WHITE, W. L. Suddeutsche Kabelwerke, Mannheim - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 211. 1945. 7 p. Price: Mimeo.- .10¢ CIOS XXV - 31

This is a complete plant equipped to manufacture bare and insulated copper and aluminum cables. They also make Pyrotenax and all ceramic insulated cable. Formulas and mixing procedures are given for ignition cable, power cable, heavy duty jacket, "Igelit" -(for aircraft, post office cable, and general use) insulations, Pyrotenax cable production is described. This is a low voltage cable for use in hot locations, such as boiler rooms, explosive factories etc. It is an Al conductor, Al sheath cable with M_gO as insulator between conductor and sheath. Filling and drawing procedure is given in detail.

SIDERY and BONSEY I. G. Farbenindustrie (metallurgical and chemical) Bitterfeld near Leipzig. Off. Pub. Bd., Report, PB 150. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 256

At the Aluminum Works I and II, alumina is fed to Sonderberg furnaces via 4" pipe by means of air pressure, total capacity being 35,000 tons per annum. There is also described the casting shop for aluminum and magnesium and the extrusion and forging plant.

TAMPICO, J. and ASHLEY, H. C. Report on Kaiser Wilhelm Institut für Metallforschung Stuttgart, Seestrasse 75. Off. Pub. Bd., Report, PB 94. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 263

Brief list of research projects at the Kaiser Wilhelm Institute for Metallurgy: (1) Combustion of aluminum and magnesium as fuels in atmosphere of steam and H_2O_2. (2) Alloy substitutes for platinum. (3) Corrosion of aluminum and magnesium alloys. (4) X-ray methods for study of metals - No details given. Names of research personnel are listed.

YOURY, F. W. and THOMAS, GEORGE Light steel building products. Off. Pub. Bd., Report, PB 356. 1945. 22 p. Price: Mimeo.- .25¢

Extensive report on a representative sample of German light steel products. Germany is considered to be years behind Great Britain and the United States in the design and manufacturing of lighter fabricated steel products for use in building construction. Discussion of steel windows and doors, with outline drawing of industrial windows, casement windows, and doors. Special account of the use of steel for hangar doors and roofs.

FOOD AND KINDRED PRODUCTS

BALDESCHWIELER, E. L. Production of synthetic fatty acids and edible fats - Deutsche Fettsaurewerke, Witten. Off. Pub. Bd., Report, PB 225. 1945. 10 p. Price: Mimeo.- .10¢

CIOS XXVI - 50

Contains flow sheets for the oxidation plantfor manufacture of fatty acids and for the manufacture of edible fats, with additional explanations of the processes for making these synthetic products. Diagram is provided of kettle used for oxidation.

CROMARTIE, WILLIAM J. and HENZE, CARLO. Research in the field of fat and protein supply in Germany. Off. Pub. Bd., Report, PB 274. 1945. 6 p. Price: Mimeo.- .10¢

A brief survey is given of the work done in Germany for the purpose of compensating the acute fat and protein shortage. A description is given of the sources of raw material (tomato seed oil, grape seed oil, fish protein, oilseed proteins), and of a synthesis (total synthesis of fats and biochemical synthesis of fat and protein by fungi from sugar and nitrogen compounds). Finally the possibilities of economizing on fat by taking advantage of the metabolic transformation of carbohydrate into fat within the human organism are considered.

DILL, DAVID B. Manufacture of Torula food yeast from sulphite liquors. Off. Pub. Bd., Report, PB 201. 1945. 7 p. Price: Mimeo.- .10¢

CIOS XXIV - 11

A dry yeast product containing one to three per cent moisture and 40 to 50 per cent protein is produced by a continuous process. The yeast is suitable as a human or animal food. Sulphite liquor produced as a by-product in the manufacture of cellulose from beech wood is neutralized with ammonia. This forms a growth medium for the Torula yeast. The process yields approximately 7 tons of dry yeast powder and fifty tons of cellulose per 100 tons of completely dry wood.

LUMBER AND WOOD PRODUCTS (EXCEPT FURNITURE)

SHELDON, L. M. Aschaffenburger Zellstoffwerke, A.G. Off. Pub. Bd., Report, PB 222. 1945. 7 p. Price: Mimeo.- .10¢

CIOS XXVI - 34

Description of plant and of processes in the production of wood cellulose. The following factors were considered as probably responsible for the high quality of the resultant product: 1. Viscosity control throughout the entire cycle; 2. Drying technique which involved exposure to temperatures not greater than 90 to 92°C while reducing the moisture content from about 30 to 7% or less; 3. Treatment of the pulp for reduction of ash by means of a final wash with dilute HCL solution. The chief use of the product was in the smokeless powder industry.

CIOS ER 41

WINSLOW, CARLILE P. Dr. Butefish, A director of I. G. Farbenindustrie and member of its executive technical committee, previously at Leuna, and an expert on coal hydrogenation. Off. Pub. Bd., Report, PB 19. 1945. 4 p. Price: Mimeo.- .10¢

Brief information collected on the following subjects: Hydrogenation of wood and lignin; destructive distillation of wood; wood-sugar-alcohol-yeast-feeding; utilization of lignin--plastics; glues and gluing; pulp and paper; wood preservatives; fireproofing; chemical seasoning; resin-treated compressed woods; painting and finishing; high-frequency heating; wood in aircraft; naval stores and gasogenes.

ER

CIOS 66

WINSLOW, C. P. Pulp and paper activities in the Mannheim, Darmstadt and Heidelberg area. Off. Pub. Bd., Report, PB 25. 1945. 10 p. Price: Mimeo.- .10¢

Lists the developments in the utilization of forest products, condition of mills, stocks of raw material on hand, and description of firms and institutions carrying on research in this field.

MACHINERY (EXCEPT ELECTRICAL)

COWDEROY, J. A. Daimler Benz plant at Wendlingen. Off. Pub. Bd., Report, PB 382. 1945. 10 p. Price: Photostat $1.00 - Microfilm .50¢

Report based on a visit to a completely destroyed Daimler Benz plant which manufactured cylinders and camshafts for types MB 501, MB 511, and MB 518, high speed diesel engines used in E-boats. The engines are briefly described, and differences between the various types are pointed out.

DEN HARTOG, J. P. and HART, H. H. Mechanical plants in Beltfort area. Off. Pub. Bd., Report, PB 341. 1944. 6 p. Price: Mimeo.- .10¢

CIOS XII - 13

Report on production and present condition of the following plants:
Alsthom at Belfort (produced electric motors from 1 to 30 H.P., large steam turbines, generators, large water turbines).
Peugeot at Montbeliard (produced trucks, auto engines, engine hoods for airplanes, tracks for German half-track vehicles).
Etablissements Marti at Montbeliard (sole manufacturer of acoustic depth sounding equipment)
Etablissements Japy Freres at Beaucourt (manufacturers of typewriters, alarm clocks, hand pumps, electric motors.)

DEN HARTOG, J. P. and SCHILLING, A. H. Mechanical and metallurgical targets, Savoy region. Off. Pub. Bd., Report, PB 343. 1944. 7 p. Price: Mimeo.- .10¢

CIOS XI - 9

Brief reports on French establishments in the fields of hydraulic engineering, aluminum, electric machinery.

COWDEROY, J.A. M.A.N., Augsburg and Harburg - the Franciskaner Keller, Munich. Off. Pub. Bd., Report, PB 270. 1945. 25 p. Price: Mimeo.- .25¢

CIOS XXV - 15

Reports of visits to M.A.N. works at Augsburg (producers of diesel engines) and to M.A.N. design offices at Harburg (gas turbine developments) and to Franciskaner Keller, Munich, which housed factories making small component parts for B.M.W. aero engines, petrol transfer pumps for aero engines, and small sheet light alloy pressings for parts for airframes. Detailed information includes: Description of engines developed at M.A.N. works, complete test records of engines for Type XXI U-Boat, schematic drawing of M.A.N. proposed gas turbine propulsion unit. Investigations were under way on axial compressors, exhaust turbo superchargers, and component parts of various types of engines, and also on the measurement of air flow in pipes.

ELLUM, G. F. C. and others. Report on J. M. Voith Maschinenfabriken. Off. Pub. Bd., Report, PB 140. 1945. 3 p. Price: Mimeo.- .10¢

CIOS ER 183

Report of work done on 1. Voith-Stauber compressors to deliver oil free air or gas 2. axial flow compressors and 3. blade profile for water turbine runners. There is also a report on wind tunnel and air compressor blade tester.

GARTER, D. H. and others. Interrogation of Herr Schaaf. Solid injection, jet engines. Off. Pub. Bd., Report, PB 136. 1945. 2 p. Price: Mimeo.- .10¢

CIOS ER 154

Herr Schaaf related about work at B.M.W. in Munich on development of solid fuel injection engines. An analysis is given on the heat-resisting materials used by B.M.W. for making certain sheet metal pressings for jet engines, the chemical content of the combustion chamber and turbine blades.

GILBERT-BERTHIEZ, F. C. Inspection of "Muller Montag", Vertical milling machine with copying attachment. Off. Pub. Bd., Report, PB 146. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 209

The Muller Montag was found to be a standard vertical milling machine of 16" x 24" in which a copying attachment had been incorporated. The machine, however, is not fully automatic and cannot be compared to the Keller machine.

GREENOUGH, H.V., JR. and others. Brown-Boverie company, plants and industries. Off. Pub. Bd., Report, PB 31. 1945. 13 p. Price: Mimeo.- .25¢ CIOS ER 76

Brief description of type 26 and type 21 submarines, together with turbo-supercharges, propulsion motors and turbines used in submarines.

JUNKERS PLANT, Dessau. Off. Pub.Bd., Report, PB 107. 1945. 2 p. Price.- .10¢ CIOS ER 46

Specifications for an 8 cyl. 90 degree V-engine, called type KMS, for use in naval torpedoes. This engine was manufactured by the Junkers Plant, Dessau. List of personnel in charge of engine development is given.

KRIG, R.J.M., COWDEROY, J.A., and HOGGER, H.C. M.W.M. Mannheim, Daimler Benz, Rothenbach Brown Boveri Co., Mannheim. Off. Pub. Bd., Report, PB 272. 1945. 8 p. Price: Mimeo.- .10¢ CIOS XXVI - 14

Reports of visits to Aero engine test plant, Daimler Benz; to M.W.M. factory at Mannheim (manufacturers of 1450 H.P. Krupp engines for U-boats); and to Brown Boveri Co. works at Mannheim (manufacturers of exhaust gas driven superchargers and gas turbines and axial air compressors). Detailed descriptions of engines found are given. The only development of axial compressor was said to have been a secret project ordered by the German Air Ministry and thought to be for the B.M.W., manufacturers of aero engines. No drawings or information were found on this product.

LLOYD, P. Gas turbine development. Off. Pub. Bd., Report, PB 159. 1945. 30 p. Price: Mimeo.- .25¢ CIOS XXV - 61

Development and production of gas turbines at B.M.W., Daimler Benz, and Junkers, covering personnel, location of plants, design, performance, manufacture, production statistics, diagram of engines. The report gives data on jet and rocket propulsion engines.

MURPHY, G. Diesel engine research and development in Germany during the war and pre-war period. Off. Pub. Bd., Report, PB 271. 1945. 7 p. Price: Mimeo.- .10¢ CIOS XXVI - 28

Diesel engine development in Germany has been directed mainly toward the improvement and weight reduction of conventional four-cycle engines, especially the six-cylinder 40/46 M.A.N. submarine engine. Detailed design information and reports on performance are given for the following engines: (1) M.A.N. double-acting, twenty-four cylinder Vee-type, two-cycle engines; (2) Junkers Juno 205 (opposed piston, aircraft diesel engine) used only experimentally; (3) M.A.N. submarine engines.

OSBOURNE, ALAN and SPOFFORD, WILLIAM P. Report on visit to offices and test shop of the Schmidtsche Heissdampf G.m.b.H. Off. Pub. Bd., Report, PB 144. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 195

Information on reciprocating steam engines of high thermal efficiency, the type and consumption of lubricating oil for these engines operating at pressures from 40 to 55 atms. Considerable information on the Schmidt high pressure steam installations was also obtained.

PERRY, R. L. Report on refrigeration and cold storage plants in Germany. Off. Pub. Bd., Report, PB 97. 1945. 3 p. Price: Mimeo.- .10¢ CIOS ER 329

Brief report on refrigeration and cold storage methods as well as research in cold storage problems, indicating that no significant advances had been made in Germany.

SAUNDERS, O. A. Research and development of engines at Hermann Goering Institute - Volkenrode. Off. Pub. Bd., Report, PB 328. 1945. 4 p. Price: Mimeo.- .10¢ CIOS XXVI - 27

Research on heat transmission, combustion, flame propagation in pipes, and the measurements of gas temperature, shaft torque, R.P.M., and their applications to engines is summarized briefly in this report. Although work was not yet completed, investigations were of a high order.

SEBBA, F. Luftfahrtforschungsanstalt, Hermann Goering-Volkenrode, Brunswick. Off. Pub. Bd., Report, PB 392. 1945. 15 p. Price: Photostat - $1.00; Microfila - .50¢

Report of visit to two of the five component institutes of the Herman Goering Research Institution. The work at the Motor Research Institute was under three main headings (a) engine research, (b) heat transfer and (c) combustion, considerable attention being paid to gas turbines. The work at the Weapon Research Institute was mainly concerned with rocket fuels and gives considerable detail concerning the composition of hypergols and ergols.

SIMONSON, E. T. German refrigeration industry. Off. Pub. Bd., Report, PB 205. 1945. 64 p. Price: Mimeo.- .50¢ CIOS XXIV - 30

Typical refrigeration equipment installations in various plants are described. Refrigerated rooms for test firing ammunition and for engine testing are also described, the latter in some detail and with several diagrams. Equipment manufactured by Linde Eismachinen A.G., is tabulated, briefly described and illustrated by a number of pictures. Brown Boverie equipment is also described. "Complete plans and specifications for the operation of U Boat Type XXI refrigeration equipment were obtained and are available from MIRS as document CIOS/MIRS/104". Research work on air conditioning of military tanks is in file as CIOS/MIRS/107. This work is considered good. Field refrigerators for troop use also considered good.

SPOFFORD, WILLIAM P., and OSBOURNE, ALAN Report on visit to Mannheim area. Description of plants. Off. Pub. Bd., Report, PB 142. 1945. 3 p. Price: Mimeo.- .10¢ CIOS ER 186

Brief descriptions of conditions of plants in the area. Heinkel Hirth at Stuttgart, Escher Yyss at Ravensburg and Brown-Bover: at Eberbach were producing jet models or doing work in the gas turbine field. Motorenwerke at Mannheim produced light weight, high speed compact Diesels with precompression cylinders.

STELLA, ARTHUR R. The Peugeot organization. Off. Pub. Bd., Report, PB 342. 1944. 29 p. Price: Mimeo.- .25¢ CIOS XII - 14

Report of prewar and wartime production of this industrial organization and particularly of the changes in production attempted by the Germans during their period of occupation. The Peugeot organization includes three main groups: Societe des Automobiles Peugeot at Sochaux (manufacturers of motor vehicles); Societe des Cycles Peugeot at Valentigney-Beaulieu (manufacturers of motor cycles); Peugeot Freres (manufacturers of Hotchkiss armament and tools and agricultural implements). Useful lists included are: names of German firms which removed machinery from Peugeot-Sochaux; list of documents brought back by investigators; information on German firms based on interrogation of workmen deported from Peugeot works.

THOMAS, G. and YOURY, F. W. German mechanical engineering industry. Off. Pub. Bd., Report, PB 369. 1945. 28 p. Price: Mimeo.- .25¢ CIOS XXV - 36

Survey of plants in the mechanical engineering industry. Principal items covered: High pressure steam generators, hammer mills for pulverizing coal, rotary excavators, pumps, crushing, grinding and screening machines (for reducing rubble to fineness suitable for the manufacture of concrete), and hard coal graders. Data include name of firms, personnel, activities, descriptions of important machinery.

ORDNANCE AND ACCESSORIES

BARNES, J. W., and SUDWORTH, J. Dr. Maurer, V.D.O. Tachometer A.G., Reichelsheim. Off. Pub. Bd., Report, PB 329. 1945. 7 p. Price: Mimeo.- .10¢ CIOS XXIV - 2

Report of interview with Dr. Maurer, engineer in charge of Reichelsheim, experimental workshop of V.D.O. Tachometer A.G., company manufacturing speedometers before the war. Projects discussed are the buzz bomb (V.1); A.4 rocket (V.2); improved buzz bomb (V.3); V.4 (an air/air rocket with a speed in the vicinity of M=0.7-0.8; Glide bomb B.V. 246; air/air rocket (X.4); butterfly (a ground/air version of X.4).

BEAN, C. M. Dynamit A.G. Small arms factory, Stadelin near Nurnburg. Map coordinate M 50/WO 3605. Off. Pub. Bd., Report, PB 127. 1945. 5 p. Price: Mimeo.- .10¢ CIOS ER 121

The factory produced military ammunition and explosive rivets, ammunition for 9 mm and 8 mm as well as caps for 20 mm and a variety of detonators. The composition used for the explosive rivets was hexanitromannite, tetrazene and aluminum filings. Lead styphnate was produced on the site from styphnic acid via magnesium styphnate and lead nitrate ("rotes trisinat"). Tetrazene was also produced by the interaction of aminoguandine sulfate and sodium nitrite. The method of manufacture of caps is given. Calcium dichlorophthalate was found in quantity, for coloring yellow tracer compositions. The work of the laboratory research is evaluated as not producing any successful cap composition other than those already known. Considerable ballistics research was done but the records were not available at the time of this visit.

BETHELL, P. Chemische-Physikalische Versuchs Anstalt der Kriegsmarine. Explosives and repellents. Off. Pub. Bd., Report, PB 316. 1945. 14 p. Price: Mimeo - 25¢. CIOS XXIII - 11

Report on composition and use of underwater explosives. This material was obtained from the explosives section of the C.P.V.A. Doenisch Nienhof which worked on problems involving explosives in all naval underwater weapons and advised the Army and Air Forces on underwater weapons. (Section corresponds to Division R.E.2c of the United States Navy, Bureau of Ordnance). The following types of high explosives used for main fillings are described:

Schiesswelle neue Art	S.16
Schiesswelle 18 or S. W. 18	S.17
Variant of S.W. 18	S.18
Schiesswelle 36, or S.W. 36	Schiesswelle 39 or S.W. 39
Compound fillings of S.W. 18 and S.W. 36.	Trialen mixtures (Torpex type)

Specifications for aluminum powder are given in Appendix A. Information given by C.P.V.A. to Japan is also included.

BRIERLEY, JAMES S. and CONSTANCE, P. W. Assessment and partial investigation report on Skoda Werke (Target No. 2/27H). Off. Pub. Bd., Report, PB 129. 1945. 4 p. Price: Mimeo.- .10¢ CIOS ER 131

According to company officials, damage of the building containing most of the records and drawings of the Werke at Pilsen, Czechoslovakia, was complete. The investigators, however, believe these records were microfilmed and hidden away, safe and obtainable. Investigation was being done in new guns and carriages in calibre ranging from 5.0 cm. to 42.0 cm.; also development work was done on ammunition components. There is a list of material available for inspection, including a list of development projects and the characteristics of development items.

CARMICHAEL, D. Karl Badstein, D. Ing., Luroper Weg 5, Bringe, Hamburg. Target No. G 2/616. German armament industry. Off. Pub. Bd., Report, PB 133. 1945. 3 p. Price: Mimeo.- .10¢ CIOS ER 147

Badstein was once attached to GHQ, Berlin and also worked with Bergmann & Co. as a research engineer. His work included: a hollow charge shell for use in the 7.5 cm. equipment; long range projectiles; new method of making large guns.

DAY, A., AND CREWS, J. M. German small arms plants. Off. Pub. Bd., Report, PB 312. 1945. 33 p. Price: Mimeo - 25¢. CIOS XII - 20

Report of work done and weapons produced during and since the German occupation at Fabrique Nationale d'Armes de Guerre, Liege (manufacturers of small arms and munitions); Pieper, Liege (manufacturers of two-barrelled signal pistol) Societe de Precision Moderne, Paris; and Manufacture Nationale des Armes de Levallois, Paris (gun parts for 30 mm. aircraft gun Type MK 103).
Detailed description of operations in the manufacture of 7.9 mm. and 30 mm steel cartridge cases are included.

DR. CHRISTIAN HENRY POLTZ, 9TH ARMY HEADQUARTERS, No.: C 28/1.20, C 2/516. Off. Pub. Bd., Report, PB 114. 1945. 5 p. Price: Mimeo.- .10¢ CIOS ER 60

Interrogation of Dr. Poltz, specialist on smooth bore shell fin stabilized and fired at high muzzle velocity. The purpose of the interview was to obtain details concerning the organization of the Heereswaffenamt (German High Command Armament Research and Development Department).

FISHER, RUSSELL A. Italian anti-tank shoulder weapon. Off. Pub. Bd., Report, PB 311. 1944. 5 p. Price: Mimeo - 10¢. CIOS XI - 17

Description and diagram of an armor piercing anti-tank weapon capable of being fired from the shoulder. The weapon is designed for a low velocity high explosive projectile.

HICKMAN, C. N. Pictorial report V-1 launching system. Off. Pub. Bd., Report, PB 324. 1945. 24 p. Price: Mimeo.- .25¢ CIOS II - 7

35 photographs and brief description of V-1 launching sites and equipment, with emphasis on method of launching the robots.

HICKMAN, C. N. V-1 Launching Sites. Off. Pub. Bd., Report, PB 321. 1945. 12 p. Price: Mimeo.- .25¢

A chronological record of a 6-day expedition to visit V-1 rocket launching sites. Attached are two diagrams- 1. the slotted tube running the full length of the ramp as it is placed thereon and 2. the piston inside the slotted tube.

HICKMAN, C. N. Visit to underground V-1 manufacturing plant. Off. Pub. Bd., Report, PB 322. 1944. 8 p. Price: Mimeo.- .10¢ CIOS II - 12

Illustrations and description of underground plant located in an iron mine near Verdun, designed mostly for manufacture of fuselage parts of the V-1 bomb.

HINES, G. H. and MESHANE, E. H. Researches of Col. J. H. Bingen. Off. Pub. Bd., Report, PB 156. 1944. 17 p. Price: Mimeo.- .25¢ CIOS VIII-9

Results of interview with Col. Bingen (Belgian) on his research, the results of which he had offered to the British Government. 1. An ultra-chronograph which is said to be capable of measuring short time intervals with an accuracy of 0.5 seconds. When used in conjunction with special break-screens on a short base it provides a convenient method of measuring M.V. of guns at all elevations with the accuracy required for experimental or calibration firings. 2. Col. Bingen developed a theory whereby multi-ply glass can be made bulletproof. In his experiments he made up windows for aircraft, which are 80 mm thick, and composed of laminations of glass and resin plastic of graded thicknesses. 3. Col. Bingen described some experiments on the rupture of stretched steel wires by falling weights striking transverse to the wire, and proposed the use of such wire and springs for use to protect targets from attack by light (incendiary) bombs. Col Bingen's notes on this ultra chronograph and on these experiments are included in this report.

HOLMES, J. G. and others. Interrogation of Herr Stiele von Heydekampf. German tank and engine program. Off. Pub. Bd., Report, PB 135. 1945. 9 p. Price: Mimeo.- .10¢ CIOS FR 153

Von Heydekampf indicated the German tank program had three influences: the desire for powerful guns and thick armor; the trend toward gun carriages of limited traverse; economic considerations. He gave information on a weapon carrier, the engine program and transmissions.

LIEBHAFSKY, H.A., MORRIS, R.H., and HULL, E.H. Bayerische Motor Werke (BMW). Off. Pub. Bd., Report, PB 384. 1945. 10 p. Price: Photostat - $1.00 - Microfilm - .50¢

A report on the features of a German station for stationary tests on rocket motors. Some 6000 rocket-fuel combinations were tested; nitric acid was the only oxidant used in these tests but many reducing agents (fuels) were tried. Electrical measurements of thrust were made, but absence of the German operators made definite scientific data impossible. Contains several plates.

LIVINGSTON, C. S., and HECHEL, E. R. Dynamit A.G. Plant at Schulsbusch. Artillery and weapons (explosives and propellants) Off. Pub. Bd., Report, PB 318. 1945. 4 p. Price: Mimeo.- .10¢

Brief description of an experimental T.N.T. plant that had remained completely undamaged. Nitration and purification processes are discussed in some detail and illustrated by 2 diagrams.

LLOYD, P. Technische Akademie der Luftwaffe, Eckertal. Off. Pub. Bd., Report, PB 383. 1945. 5 p. Price: Photostat $1.00 - Microfilm .50¢

Very brief report on Prof. Leist's and Nagel's research in jet propulsion. Projects at Eckerstal are briefly described: Low tension ignition system; ignition and stability of turbine combustion; torch igniter using fuel of the Riedel starter; tests on alternative fuels.

MACRUDER, L. B., JR. Eisenwerke Oberdonau; documents and equipment listed. Off. Pub. Bd., Report, PB 131. 1945. 3 p. Price: Mimeo.- .10¢ CIOS ER 143

This Linz, Austria, plant has electric, open hearth, and Bessemer melting facilities, practically all the Bessemer steel being used for steel castings (principally for miscellaneous automotive parts at Steyr). The plant is an excellent modern one which was apparently designed for the production of armor and fabrication of major armored vehicle components. Lists are included of personnel interviewed, equipment evacuated and documents removed, including a general assembly drawing of the Maus, 200 ton tank.

MARTIN, C. C., Jr., and CONSTANCE, P. W. Planning board of Reich Research Council. Off. Pub. Bd., Report, PB 102. 1945. 5 p. Price: Mimeo.- .10¢

This report gives information obtained at this organization (located in Lindon) which controlled all development and research activities within Germany and occupied countries. The Board maintained files of all research projects, institutions and personnel and records of results. Information was also obtained on certain specific research projects, including: 1. An aerial rocket about 10 inches in diameter to be fired from fighter or fighter-bomber aircraft against bomber formations; 2. a similar aerial rocket which uses the same body and propelling charge but a differently constructed warhead; 3. Central mechanism and testing apparatus for accoustically guided torpedo G7E; 4. An anti-personnel weapon for use against infantry; 5. An anti-aircraft device.

MORTENSEN, M. A. Seewerkes, Immenstaad Der Luftschiffbau Zepplin G.M.B.H., Friedrichshafen. Off. Pub. Bd., Report, PB 120. 1945. 5 p. Price: Mimeo.- .10¢

Report on Seewerke, established as an aircraft torpedo proving range and overhaul shop in 1942. Torpedoes to be proved were: LTIA-1, 2, and 3 and LTIB-1,2,3, and 4 and for acoustic systems.

ROOP, W. P. German torpedo motor fluid (Ingoline). Off. Pub. Bd., Report, PB 326. 1945. 13 p. Price: Mimeo.- .25¢ CIOS XXIV-7

German navy directives relating to the delivery of motor products for "ingoline" torpedoes. In French, with English translation attached.

ROOSEVELT, C. V. The status of synthetic training in Germany. Off. Pub. Bd., Report, PB 340. 1945. 9 p. Price: Mimeo.- .10¢ CIOS XXII-58

An evaluation of German military synthetic training methods and equipment. Potentialities of synthetic training were not fully appreciated by the German armed forces. Most of the trainers found would not be valuable to the American armed forces since they train only for German equipment or are inferior to devices already used here.

SIMPSON, J. W., and TAYLOR, G. W. R. Rheinmetall-Borsig Werke, Unterluss; artillery and weapons. Off. Pub. Bd., Report PB 319. 1945. 7 p. Price: Mimeo.- .10¢ CIOS XXV-3

Report on the following artillery equipment or parts of equipment seen at this main testing range for all Rheinmetall Borsig guns: 5.5 cm. Automatic Equipment Flak MK.58 and Flak MK.59; 88 mm. Flak, remote power controlled mounting; 75 mm. pack howitzer; 37 mm. A/TK. equipment; 75 mm. pak 41 with muzzle squeeze; and 88 mm. muzzle charging device.

SMITH, FRED B. Vereinigte Apparattebau Aktiengesellschaft, a subsidiary corporation of Rheinmetall Borsig Aktiengesellschaft (Target No. C 19/191). Description of plant and personnel. Off. Pub. Bd., Report, PB 130. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 132

Outlines visit to Wurzen, Grimma and Trebsen, the personnel visited and their duties. The Vereinigte Apparattebau Aktiengesellschaft was responsible for design of all army artillery carriages. Also visited was Dir. Edouard Mueller who was in charge of design of naval guns and mountings until Sept. 1, 1944.

TEUTSCH, KURT. Bleichert transportanlagen Gmb H, Leipzig, N 22, Kaiser Friedrich Str.34. Off. Pub. Bd., Report, PB 126. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 120

Report on the condition of the Bleichert establishment, Target No. C 2/525, and of the production there of flak grenades and axles for the German infantry gun 1942. There were removed grenades and machines and the entire secret correspondence with the Oberkommando der Wehrmacht. Lists documents and equipment removed from XIVth Flakdivision and 4th Einsatzbattallion, Leipzig-Schonau.

WERNISCH, GEORGE Robot bomb factory, Thill, Luxembourg. Off. Pub. Bd., Report PB 325. 1945. 5 p. Price: Mimeo.- .10¢

CIOS XXII - 9

Description of an iron mine which had been in the process of being converted into an underground factory.

PRIMARY METAL INDUSTRIES

AGAR, J. N. German anti-fouling compositions. Off. Pub. Bd., Report, PB 381. 1945. 5 p. Price: Photostat $1.00 - Microfilm .50¢

A short review of German research on anti-fouling materials. Principal research activity during war was an attempt to reduce the content of copper and mercury in the anti-fouling composition, as these metals were in short supply and some success was achieved. Research also carried out on the theory that fouling should not occur on positively charged surfaces, but results at War's end were inconclusive.

COLCLOUGH, T. P. I. G. Farben - Oppau Works - Ludwigshafen. Off. Pub. Bd., Report, PB 350. 1945. 15p. Price: Mimeo.- .25¢

CIOS XXIV - 12

Description of condition of plant and process of production of both carbonyl nickel and carbonyl iron powder at Oppau Works. Manufacturing method is based on principles which were developed by Mond Nickel Company in the manufacture of nickel and which have been adopted in recent installations for the production of Carbonyl Iron Powder in the U.K. and the U. S.
Both iron and nickel under suitable conditions of temperature and/or pressure combine with CO gas to form a Carbonyl and by variation of the temperature and/or pressure, these Carbonyls decompose with the liberation of CO gas, which is recirculated, and the decomposition of the metal.

DOVE, A. B. Elektrowerk-Weisweiler (metallurgy). Off. Pub. Bd., Report, PB 344. 1945. 16 p. Price: Mimeo.- .25¢

CIOS XL - 13

Report on plant located at Weisweiler, near Eschweiler, indicating the plant had operated on ferro-alloys of silicon, manganese, chrome, molybdenum and tungsten. The report covers the plant layout, present equipment in plant, list of equipment removed to other plants, electrical characteristics of furnaces, and data regarding number of furnaces operating from May 1943 to close of operations, about Sept. 6, 1944. There are photographs and a sketch.

WAGNER, EDMOND H., IVORY, W., and HOLMES, J. G. Tungsten carbide plants. Off. Pub. Bd., Report, PB 313. 1944. 12 p. Price: Mimeo - 25¢.

CIOS XVII - 3

Report on two French Tungsten Carbide Plants: Messrs. FILIERE UNION and SOCIETE DE LORRAINE DE CHARBON POUR L'ECTRICITE, both located in Paris. The firms were engaged in the production of cores for projectiles during the war. The report covers: Sources of raw materials, processes, plant, products, German activities. The appendix shows a table "New German Code-1941".--(Tool tips and dies).

PRODUCTS OF PETROLEUM AND COAL

ALDRICH, R. C. Polhoehe measurement of lubricating oil. Off. Pub. Bd., Report, PB 280. 1945. 4 p. Price: Mimeo.- .10¢

CIOS XVII - 11

"Polhoehe" value is related to viscosity index. The method of determining the "Polhoehe" value of an oil is given. A nomograph taken from "Lubrifiants" a French booklet (File CIOS/MIRS/102) used for determining "Polhoehe" values is reproduced.

ATWELL, H.V., and SCHROEDER, W.C. Steinkohlen-Bergwerk Rheinpreussen Moers-Meerbeck. Fuels and lubricants, CIOS target no. 30/5.05. Off. Pub. Bd., Report, PB 367. 1945. 152 p. Price: Mimeo.- $1.00

CIOS XXVI - 80

Description of the Fischer-Tropsch plant of the Steinkohlen-Bergwerk Rheinpreussen, giving details of the coking, synthesis and alcohol plants; listing annual production of primary products; giving information regarding other synthetic fuel plants. Data and distribution of the following products are given: liquefied gas (Flussiggas: Treibgas), stabilized benzine (Grund Benzin), Diesel fuel, Kognasin, hard paraffin and Gatsch. There are included 27 figures, 23 tables and appendices, A. listing seized documents; B. giving translations of documents relating to research activities; C. documents relating to relocating Moers equipment; and D. abstracts of patent applications relating to the Fischer Tropsch process.

COCKRAM, C. Gelsenburg A.G. - bituminous coal hydrogenating plant. Off. Pub. Bd., Report, PB 27. 1945. 5 p. Price: Mimeo.- .10¢

This plant hydrogenated bituminous coal at 700 ats. Some 2,000 - 4,000 tes/months of tar oils, mainly middle oils, were also processed. The petrol and middle oils made from coal and tar oils were treated in the vapour phase at 300 ats. pressure making petrol of 65% volatility of 100°C. and F.B.P. 155-160°C; the clear octane number was 72. Publication gives a description of the process.

COTTON, ERNEST Preliminary oil team report on Ammoniakwerke Merseburg, G.m.b.H. plant on I. G. Farbenindustrie A.G. at Leuna, Germany. Off. Pub. Bd., Report, PB 7. 1945. 2 p. Price: Mimeo.- .10¢

This is a general chemicals and synthetic oil plant manufacturing several products, such as synthetic aviation fuel, synthetic motor fuel, synthetic lubricating oil, fixed nitrogen, synthetic alcohols, and other chemicals. Brown coal is the principal starting material although some hard coal is used.

EVANS, LOUIS P. Dipl. Chem. Paul Schneider. Off. Pub. Bd., Report, PB 32. 1945. 3 p. Price: Mimeo.- .10¢

Dr. Schneider directed the production of fuels and lubricants from all sources throughout greater Germany during the war. Paper gives a brief description of the organization which he headed, as well as the types of products produced.

FORAN, E. V., and ALDRICH, R. C. French shale oil industry. Off. Pub. Bd., Report, PB 372. 1945. 51 p. Price: Mimeo.- .50¢

This report based on an inspection trip of French units and pilot plants, deals primarily with methods of distilling shale with secondary consideration to the question of crude oil recovery. Subjects treated include: survey of oil shale resources, description of processes at distillation plants, summary of characteristics of products obtained. The following plants are described in detail: Societe Miniere des Schistes, Autun; Societe Chimique de la Grande Paroisse, St. Hillaire; Petit Furnace; Societe Bitumes et Schistes, Lavernke.
Appendices contain additional technical information including a detailed report of the Schist oil output at Autun and diagrams and flow sheets illustrative of distillation processes.

FRASER, D. S. and others. Interrogation of Drs. Julius Schmitt, Ludwig Schmitt, and Heinrich Schmitt, of Dr. Heinrich Schmitt-Werke, K.G., Berchtesgaden. Off. Pub. Bd., Report, PB 376. 1945. 3 p. Price: Mimeo.- .10¢

Visit with Dr. Heinrich Schmitt, inventor of Schaumkohle (foamed coal) and his two brothers. The invention comprises wetting coal screened from 0.2 to 1.0 mm. with 4-10% of a thermo-setting resin, such as phenolic resin. The foamed coal thus obtained with its high reactivity and permeability was claimed suitable for stationary and vehicular gas producers, in gas engines and rockets, etc. Dr. Schmitt also gave information on artillery-shell cases made so as to fire an 88 mm. shell from a 105 mm. gun, the range being increased from 8 to 16 km.

CIOS ER 212

GETZ, C. A. and PFEIFFER, E. V. Report on coal-stripping method and equipment in Germany. Off. Pub. Bd., Report, PB 79. 1945. 3 p. Price: Mimeo.- .10¢

Report on an unusual coal strip mine method: General description of construction and operation.

GUNTHER, A. E. Germany and Austria, liquid fuels II. Crude oil production group 2B, chief producing companies. Off. Pub. Bd., Report, PB 98. 1945. 5 p. Price: Mimeo.- .10¢

This report is an account of the relations which existed during wartime between the owners and operators of the Heide-Meldorf group of oilfields, the Deutsche Erdöl Aktiengesellschaft, and the German Navy. Drilling and production of oil wells was an ordinary commerical undertaking with the Navy as the largest consumer. Under a Navy contract attempts were made to produce oil by mining and distillation from a strongly impregnated chalk of Cretaceous (Senonian) age, called "Oil Chalk". Contract was never fulfilled due to technical difficulties and success of allied bombing. British Military Government have ordered Deutsche Erdöl to continue with mining of "Oil Chalk" for use as a substitute fuel.

HALL, C. C. and POWELL, A. R. Krupp Treibstoffe Werke G.M.B.H. Wanne-Eickel - Fuels and lubricants. Off. Pub. Bd., Report, PB 288. 1945. 8 p. Price: Mimeo.- .10¢ CIOS XXVI - 26

This report is in two parts. I. Fischer-Tropsch Plant. II. Krupp-Lurgi Low Temperature Carbonization Plant. I. was badly damaged.
I. Production and purification of synthesis gas is described, and composition of the gas given. The synthesis process and apparatus is described in some detail. A drawing of the medium pressure oven is reported to have been obtained. Products are given on a percentage basis, and use indicated. Capacity about 65,000 tons per year.II. Description of the coking chambers given in some detail. Coking capacity of plant - 20,000 metric tons of coal per month. By-products briefly mentioned.

HOLROYD, H. Visit of CIOS team to oil centers in Leuna, Lutzkendorf, Zeitz, Bohlen, Stressfurt, and factories in Russian occupied territories. Off. Pub. Bd., Report, PB 38. 1945. 6 p. Price: Mimeo.- .10¢

CIOS FR 89

Report on German synthetic fuel production and description of processes and production of synthetic fuels at the above listed plants and at Blechhammer, Brux, Politz, Heiderbrech, Moosbierbaum, and Ludwigshafen/Oppau. Adoption of automatic control and the use of a falling temperature gradient contributed to an increase in coal throughout at the Leuna hydrogenation plant. The chief research and development work at Leuna has been in connection with production of high aromatic content gasoline. Synthesis gas and hydrogen were made at Lutzkendorf by the Winterschall-Schmalfeldt process. At Blechhammer a pressure process was used for conversion of water gas to hydrogen.

HOWES, D. A., ALLEN, J.G., and SCHINDLER, HANS. Wirtschaftliche Forschungs G.M.B.H. - Stassfurt and Bad Berka. Off. Pub. Bd., Report, PB 290. 1945. 7 p. Price: Mimeo.- .10¢ CIOS XXVI - 5

Detailed description of underground blending station at Strassfurt for the blending of motor gasoline and Diesel oils. Motor gasoline is blended from Hydro gasoline with or without benzol, plus TEL. Specifications are given for aviation diesel oil, for jet propulsion fuel, and for lubricating oil. A briefer note on the Bad Berka station, which had suffered damage by bombing, and a list of three other stations are also included.

JONES, H. F. and others. Wirftschaftliche Forschungsgesellschaft M.B.H. (WIFO), Pferdebachtat, Heiligenstadt. Off. Pub. Bd., Report, PB 374. 1945. 5 p. Price: Mimeo.- .10¢ CIOS ER 310

Descriptions of the installations and of the Wifo are given. This appears to have been a distribution center for gasoline and benzol, as well as a center for blending oils and fuels. Considerable discussion is made of the organization of the Wifo.

CIOS ER 3

KUHNE, PAUL K. Preliminary oil team report on I.G. Farbenindustrie, Heidelberg. Off. Pub. Bd., Report, PB 2. 1945. 3 p. Price: Mimeo.- .10¢

Method of preparation of aviation gasoline generally being followed in Germany where bituminous coal or brown coal is hydrogenated in several stages. The final blend with 5.6 Tel/Imp. gal. tests 95-96 octane no., Motor method, and 150 blending index, rich rating. This was obtained by the use of the D.H.D. process, involving operation with a moving catalyst bed. With the single step hydrogenation process, T.T.H. process, brown coal tar is hydrogenated in the liquid phase with 5055 catalyst yielding a low quality gasoline, 55 octane no., diesel oil and wax. The wax is well suited for synthetic lubricating oil manufacture by cracking to olefines, polymerizing with aluminum chloride and clay finishing.

MAINE, G. Oil and Gas Fields in the County of Bentheim and Adjacent Counties. Off. Pub. Bd., Report, PB 44. 1945. 4 p. Price: Mimeo.- .10¢ CIOS ER 109

Detailed account of oil and natural gas fields in Benthein county and adjacent counties of Meppen and Steinfurt, all near the German-Dutch border. Information on ownership, location, production, pipe lines, transportation, wildcatting areas.

MURRAY, R. L. Dr. F. Raschig G.M.B.H. Chemische Fabrik Ludwigshafen Am Rhein. Off. Pub. Bd., Report, PB 224. 1945. 6 p. Price: Mimeo.- .10¢ CIOS XXVI - 48

Report of visit made to plant producing the following products from coal tar; distilled tar for roads, middle oil, aqua ammonia, heavier oils for wood impregnation, benzol wash oil, coal tar pitch (for briquetting), miscellaneous fine chemicals, phenol formaldehyde moulding powders, phenol formaldehyde cast resins, plywood adhesives. Description of processes and production capacities is given. Synthetic phenol was produced by chlorination of benzene with HCL and air over a catalyst followed by catalytic hydrolysis of the chlorobenzene with steam, thus regenerating the HCL.

ODELL, WILLIAM W., and BALDESCHWIELER, EMILE L. French oil shale industry. Off. Pub. Bd., Report, PB 291. 1945. 9 p. Price: Mimeo.- .10¢

This report describes oil shale distillation plants inspected at Autun, St. Hilaire, Lavernhe and Severac-le-Chateau and the Petit Retort developed at Grenoble. The Pumpherston type of retort used at Autun which exactly duplicates the Scotch units, has been superseded by unit developed at St. Hilaire known as Lantz retort. This apparatus is vertical, comprised of two distinct but connecting sections, each section traversable by a gas stream. Mareceaux retort used at Lavernhe and Severac-le-Chateau is vertical and comprises two concentric upright cylindrical shells which confine between them a mass of downwardly moving crushed shale. Crushed shale is charged into the upper portion of the retort and discharged continuously at bottom. The Petit Retort has been operated only on a pilot scale. In this process the oil wetted shale passes through a horizontal rotating, externally heated, cylindrical retort comprising two concentric cylinders.

ORIEL, J. A. Oil tragets in Ruhr and Hanover areas. Off. Pub. Bd., Report, PB 282. 1945. 23 p. Price: Mimeo.- .25¢ CIOS XXIII - 16

Description of the underground lubricating oil plant at Porta; refinery of the Deurag/Nerag at Misburg; Nienhagen and neighboring oil fields; underground hydrogenation plant in the Bueckeberg Mountains; Ruhr Chemie installation at Holten. Lists of batch and dispersed distillation plants are given. This report also includes a detailed description of the process for the dehydrogenation of the paraffins for the manufacture of "O.X.O." at the Ruhr Chemie installation at Holten.

ORIEL, J. A. Report on a visit to oil targets in the Ruhr and Hanover areas 4 to 21 April 45. Off. Pub. Bd., Report, PB 3. 1945. 2 p. Price: Mimeo.- .10¢

Gives list of "Ofens", dispersed refineries, "Rosts", smaller batch still distillation equipment, "Dachs", under ground lubricating oil plants, "Taube", cracking plants, and "Jacob" primitive cracking plant working in conjunction with an "Ofen".

ORIEL, J. A., HORNE, W. W., and JONES, J. P. Dach 1, lubricating oil plant, Porta, Germany. Off. Pub. Bd., Report, PB 293. 1945. 8 p. Price: Mimeo.- .10¢

This report describes equipment and processes in an almost completed underground plant to produce aviation lubricating oil from topped crude oil. The plant consisted of these five units: 1. Distillation - to be carried out in a two stage Coubrough unit; 2. Extraction - neutral and bright stocks were to be furfural extracted for the work up of aviation lubricating oils; 3. Dewaxing - unit is a recent design of Edeleanu Gesellschaft, using methylene dichloride and ethylene dichloride as solvents followed by a continuous band filter; 4. Clay contacting - oil to be batch clay contacted; 5. Clay extraction - batch naphtha extraction of used clay. Diagram of plant and photograph of its main entrance are given.

ORIEL, J. A. N. V. Internationale Maatschappij Hyderringstechniek & Chemie. (International Hydrogenation Engineering & Chemical Co., and International Hydrogenation Patents Company, The Hague, Holland). Off. Pub. Bd., Report, PB 36. 1945. 2 p. Price: Mimeo.- .10¢

This organization is the joint concern of the Standard and Shell Oil groups, being a holding company for patent rights applicable to oil hydrogenation and gas synthesis. The company had agreements with I. G. Farben and Ruhrchemie. A very brief description of the patent situation is given.

PECK, E. B. Dr. Karl Winkler, Technical Director of Continental Oil A.G. C.30/154. Off. Pub. Bd., Report, PB 54. 1945. 1 p. Price: Mimeo.- .10¢

Gives some information about Continental Oil A.G., a holding company with business devoted to petroleum in occupied countries: Balkan States, Rumania, and Carpathiam (Poland and Czechoslovakia). Developments mentioned are extraction of wax (Montan) from Sapropil in Latvia, and low temperature distillation of peat.

SHERWOOD, T. K. Wirtschaftliche Forschungs G.M.B.H. Eferbachtel fuel blending station. Off. Pub. Bd., Report, PB 366. 1945. 5 p. Price: Mimeo.- .10¢

CIOS XXVI - 68

Brief report on a German Army Depot used for blending, testing, and packaging fuels and lubricants. The fuels were mostly from the Fischer-Tropsch synthesis. Rough specifications are given for motor fuel, benzene, Diesel fuel, automotive lubricating oil, gear oils.

SMITH, R. H. and others. Kohle-Oel-Union Von Busfg Kommanditgesellschaft (oil recovery from shale). Off. Pub. Bd., Report, PB 64. 1945. 2 p. Price: Mimeo.- 10¢

CIOS ER 148

Evaluation report of plant at Schorzingen, Wurtemburg, producing 7 tons per day of oil by underground mining and underground distillation of shale.

TETT, H. C. Luftfahrt Forschungs Anstalt Hermann Goering Nr. Volkenrode Brunswick - Interrogation of Prof. Schmidt & Prof. Lutz: Fuels and lubricants. Off. Pub. Bd., Report, PB 35. 1945. 2 p. Price: Mimeo.- .10¢

Brief description of personnel and research carried on at laboratory. There is no evidence of a practical nature on fuels and lubricants.

TETT, H. C. and DEES, H. C. I. G. Farbenindustrie A.G. Ludwigshafen A,G,, Oppau. Fuels and lubricants testing and development. Off. Pub. Bd., Report, PB 101. 1945 4 p. Price: Mimeo.- .10¢

Report on personnel, facilities, documents and research and development activities at the Laboratory at Oppau. A broad survey of the research activities is contained in this report and includes work with rocket, jet and diesel fuels, lubricants and aviation gasoline. Mention is made of preparation of synthetic oils for jet aircraft and rockets.

VINCENT, J. W. Laboratories of Bataafsche Petroleum Maatschappij (B.P.M.). Off. Pub. Bd., Report, PB 42. 1945. 5 p. Price: Mimeo.- .10¢

Brief description of the research carried on by the Laboratory during the war, and the methods taken to maintain staff and carry on this research. Report lists chief research problems handled.

WATSON, H. E. Dr. Asser (Sen.) Research and development: yield and quality of natural resins, coal tar products by low pressure distillation, etc. Off. Pub. Bd., Report, PB 61. 1945. 2 p. Price: Mimeo.- .10¢

Report of research and development work of Dr. Asser in improvement in yield and quality of natural resins and improvement of the yield of useful products from coal tar by low pressure distillation. He has also worked out a system of collecting and regenerating waste lubricant oil which failed owing to official interference. He has produced a special resin with low pressure, By the same process he has recovered useful resins from brewery pitch; he has made a lanolin substitute from high melting paraffins and soft lacquers from resinous lubricating oil residues. He has also worked out an improved method of bonding plywood, using mixed bakelite and urea resins. The main principle of the resin process is extraction of the resin instead of tapping and the residue is then suitable for sulphate or sulphite pulp.

PROFESSIONAL, SCIENTIFIC, AND CONTROLLING INSTRUMENTS, PHOTOGRAPHIC AND OPTICAL GOODS, WATCHES AND CLOCKS

CALVERT, E.S., SPEAK, G.S., and DUNCAN, C.J. Photographic lenses and optical instruments. Off. Pub. Bd., Report, PB 334. 1944. 27 p. Price: Mimeo.- .25¢

CIOS XXIII - 3

Report on visits to 17 establishments in the Paris area in December 1944, with mention made of those firms not visited. Categories of investigation were the following: lenses and optical instruments, optical glass, air cameras, cine cameras, electronic equipment, aerodrome and aircraft lighting and color filters.

CHANCELLOR, P. M. Film production and methods. AGFA Film. Off. Pub. Bd., Report, PB 339. 1945. 55 p. Price: Mimeo.- .50¢

CIOS XXVI - 61

This is a full report of manufacturing data and finished products by the plant responsible for two thirds or more of the photographic films and plates used in Germany. Special attention is given to the only new product used experimentally by the Luftwaffe- the Agfa color aeronegative material with its corresponding Agfa color positive transparency and paper print materials. This material seemed superior in some respects to the amateur Kodacolor negative film used in the United States. Supporting data such as formulas of the dye couplers, sensitisers, processing chemicals, filters and instructions for use are included. Information is also given on the relations which Agfa had with the Japanese film industry.

CLARK, R. E. Preliminary report on CIOS Trip No. 311 Wendelstein - Description of Heimholtz Institute; Development of measuring instruments. Off. Pub. Bd., Report, PB 65. 1945. 3 p. Price: Mimeo.- .10¢

CIOS ER 150

List of projects at the Helmholtz Institute: (1) Measuring blood pressure during exposure to shock waves. (2) Measuring the change of velocity of air by disturbance of the predischarge of a spark gap. (3) Measuring of resonance of the human breast. (4) Measuring quick changes of temperature occuring with shock waves. The institute also had an experimental range and a hospital where animal reactions to shock waves were studied. No details given.

COATES, F. H. Gevaert photographic material manufacturers - Antwerp. Off. Pub. Bd., Report, PB 335. 1945. 4 p. Price: Mimeo.- .10¢

CIOS XXII - 10

Very brief report on the GEVAERT manufacturing company, the largest Belgian photographic manufacturer. A super speed ultra fine grain film was presumably produced for the German air force, but no details could be discovered.

COLLINS, RALPH S. A.Wirtschaftgruppe Feinmechanik & Optik, Schillerstr. 4. Jena, Germany. Off. Pub. Bd., Report, PB 149. 1945. 6 p. Price: Mimeo.- .10¢

CIOS ER 249

Organization and duties of the Wigru (Wirtschaftgruppe Feinmechanik and Optik), a self-governing organization including manufacturers of optical instruments, spectacle lenses and frames, photographic and cine-equipment and fine mechanical products, mechanical medical instruments, and orthopaedical products. In peacetime the Wigru advised numbers on economic matters and influenced their civilian production along lines laid down by the Government. War production was controlled by the Ausschusse of the Ministry for Armament and War Production. During wartime civilian requirements and distribution were controlled by the Reichsbeauftragter of Feinmechanik und Optik. Connected with the Wirgu was the Prufungsstelle Feinmechanik und Optik which supervised exports and regulated export prices.

DUNN, R. W. and others. The Schacht Marie Salt Mine, Beendorf (Dispersal of Siemens, Berlin). Instruments and equipment. Off. Pub. Bd., Report, PB 278. 1945. 16 p. Price: Mimeo.- .25¢

Report of the firm "SAB" which stands for "Salzabbaubetrieb Beendorf" (Salt Mining Works of Beendorf) manufacturers of aircraft instruments and autopilots. The plant is located in a disused salt mine at a depth of approximately 1,200 ft. and was approximately two thirds completed. Production had not commenced, but about 1,000 K.22 and 100 K.23 instruments had been completed before the firm was evacuated from Berlin. Descriptions and diagrams of the K.22 and K.23 automatic rudder controls are given.

ELLIOT, A. Technical report on C.I.O.S. Special mission to Hanover. Professor R. Hase, Pyro-Werke. Off. Pub. Bd., Report, PB 113. 1945. 4 p. Price: Mimeo.- .10¢

CIOS ER 59

Interrogation of Professor Rudolph Hase, specialist in temperature measurement and infra-red radiation. He had also developed (1) vacuum thermo-elements in lead glass bulbs for radiation pyrometry, (2) bolometers of the thermistor type by evaporating copper on to a cellophane base, probably used for aircraft or ship detection, (3) tests of reflectivities of paints. Hase indicated that the German Navy had been disappointed in infra-red apparatus and the extent to which it was influenced by atmospheric conditions. Hase also owned a factory (Pyro Werke) that manufactured pyrometric devices; the only product of military use was a compact self-contained surface thermocouple for measuring external temperature of gun barrels.

HUNT, G. I. and others. Telefunken, Bad Liebenstein: Leuchstaff, Steinbach: Gottingen University, Physical Institute-Investigation of cathode ray tube and iconoscope camera designs. Off. Pub. Bd., Report, PB 92. 1945. 2 p. Price: Mimeo.- .10¢

CIOS ER 257

Brief report on Cathode ray tubes, iconoscope camera designs, and fluorescent screen materials. Special discussion of developments in fluorescent materials: (1) Use of mixtures of zinc sulphide and zinc selinate for screen powders, (2) heating of powders in frozen atmosphere at 900 degrees C. under pressure of 200 atmosphere.

LEE, H. B. Sterephon sound recording system. Off. Pub. Bd., Report, PB 338. 1945. 7 p. Price: Mimeo:- .10¢

CIOS XXII - 46

This report describes a system intended primarily for high quality sound recording on film. It was privately developed by a German physicist, Dr. Carlheinz Becker, of Thansau uber Rosenheim. The system employs well-known means in some respects, but has the important advantage of giving excellent 3-channel reproduction of great dynamic range and low noise level using a sound track of total width of only 2.65 mm.
Attached are 2 diagrams: figure 1 shows a schematic diagram of the electrical portion of the system, while figure 2 gives a schematic diagram of the optical system.

PULLING, N. H. and others Physical and optical instrument targets, Paris area. Off. Pub. Bd., Report, PB 332. 1944. 88 p. Price: Mimeo.- .50¢

CIOS IV - 3

Report on firms manufacturing optical and other instruments in France. Information on the following:location, work done for Germany, equipment, types of instruments, manufacturing facilities.
Types of instruments: Magnetic compasses, range finders, binoculars, gunsights, directors, correctors, telescopes, sound locators, searchlights, mirrors, submarine periscopes, etc.

REID, J. B. Voigtlander und Sohn, A. G., Braunschweig-Gliesmarode. Off. Pub. Bd., Report, PB 337. 1945. 9 p. Price: Mimeo.- .10¢

CIOS XXVI - 26

Report on the Voigtlander Photographic company. Information on telescopic rifle sight, 35 mm AA recording camera, 16 mm camera gun, periscopic sight for reconnaissance aircraft, air battle situation projector, lens milling machines, lens centering machine, binocular prism rounding machine. There is also a list of lens designs.

THORNE, C. R. Report on manufacture of air photography apparatus, etc. by certain firms in Germany (Munich and Stuttgart Area). Off. Pub. Bd., Report, PB 148. 1945. 9 p. Price: Mimeo.- .10¢

Brief accounts of visits to 13 German firms manufacturing aerial photography equipment. A number of the firms either bombed out or destroyed by fire, while others made little or no photographic equipment during the war. Among equipment seen and described are: (1) Camera, "Appareil Photographique, Type 40", an air camera of French design; and (2) "Zak 35", a 35 mm gun camera, designed for mounting outside the wings of the aircraft. A relief mapping section in Munich, probably unfinished, was also examined, but no new processes were observed.

TOULMIN, S. E. Report on Deutsche Seewarte (Nautisch-Techische Abteilung). Off. Pub. Bd., Report, PB 143. 1945. 4 p. Price: Mimeo.- .10¢

CIOS ER 188

Describes experimentation for the German Navy on: magnetic, distant reading, and gytomagnetic compasses; gyroscopes; naval optical equipment: electron microscopy; and degaussing

RUBBER PRODUCTS

BULLARD, R. H. Englebert Fils S.A., Liege - miscellaneous chemicals. Off. Pub. Bd., Report, PB 169. 1945. 9 p. Price: Mimeo.- .10¢

Enumerates types and uses of Buna received at the Liege Plant. Gives a few typical formulations for compounding Buna S and method of depolymerizing briefly described. The following ingredients were used: CK 3 and CK4, a carbon black; aluminum oxide called by the Germans Tonerde-Gel, a substitute for carbon black, called "white carbon", good reinforcing pigment; Kautschol and Naftolene ZD (also Naftolene NV which is not so good), necessary as plasticizers; Vulcacite AZ, an accelerator; Koresine, a black resin to make Buna sticky; Antiplast, a substitute for stearic acid; rayon, a substitute for cotton; and Oppanol (isobutylene polymer) for rubber cement (does not stick well). Recently pure natural rubber is used only in the cushion. Best Buna tires made with 30% untreated and 70% depolymerized Buna. Germans have reduced tread thickness as

Buna tires separate between plies before tread is gone. Monthly figures for factory program, percent of program realized, weight of tyres and percent of Buna in tyres given, Jan. 1942 - July 1944.

DAVEY, W. C., PATTERSON, P. D., and HAMMOND, G. L. Synthetic rubber. Off. Pub. Bd., Report, PB 172. 1945. 64 p. Price: Mimeo.- .50¢
CIOS XXII -8

Investigations in Paris and Central France in September and October 1944, giving not only technical information but also economic intelligence with respect to France and Germany. Records were acquired of the Heidelberg rubber conferences, also details of German Buna deliveries to France with code numbers of factories of origin. Technical information was on the use of the various types of Buna and the plasticization, compounding and processing of them and on the performance of Buna tires. Diagrams.

DAVEY, W. C., ROBSON, J. J., and PATTERSON, P. D. Englebert factories - Liege and Aachen, Kabelundgummiwerke - Eupen. Off. Pub. Bd., Report, PB 174. 1944. 67 p. Price: Mimeo.- .50¢ CIOS - XXII - 2

Detailed report on visits to tire factories at Aachen and Liege and cable factory at Eupen. Economic information is given on the production rates, relations of various rubber companies, relative importance of German tire plants, raw material supplies, organization of German cable industry, and scale of operations. Technical subjects treated include: types of German Buna, compounding ingredients, plasticization and variability of Buna, use of synthetic rubber in cables, processes of tire production, textiles, tire construction and performance, reclaiming synthetic rubber, Buna latices, Buna milking machine liner. Appendices contain: lists of documents and raw materials obtained, list of principal German and Austrian cable manufacturers, tire compounding data, cable mixings, results of examination of samples of rayon from Aachen and Liege and of examination of a Buna milking machine liner.

HANDLEY, E. T., HINGELEY, S. F., and ROWZEE, M. R. The Harburger Gummiwaren-Fabrik, Phoenix, A. G., located in Harburg near Hamburg. Off. Pub. Bd., Report, PB 192. 1945. 117 p. Price: Mimeo.- .75¢
CIOS XXIII -3

Visit in May 1945 with information on the following aspects of the Phoenix plant: thermal softening of Buna, physical testing, production of reclaim, tire building, mill-room equipment, tire scrap reports, tire cost information, manufacture of footwear, use of Desmodur R, and manufacture of bicycle tires. Also included is a General Survey of the German Rubber Industry, based on interviews with Otto A. Friedrich of Phoenix, prepared by E. R. Rowzee. Besides, there are reports on the New York-Hamburg. Gummiwaren-Fabrik, the H. Rust and Company, and other aspects of the Phoenix plant.

HOPKINSON, RUSSELL and others. Continental Gummiwerke A.G., Hanover. Miscellaneous chemicals. Off. Pub. Bd., Report, PB 190. 1945. 129 p. Price: Mimeo.- .75¢
CIOS XXIII - 1

Detailed information on three Continental plants in the Hanover district: Main plant is Vahrenwalderstrasse; Excelsior Works at Limmer; Nordhafen Plant at Stocken; Formulae and processes, and design and construction for tires and other rubber products are given as well as statistics of rubber consumption and tire production. In addition to tires other products produced were: Belts, V-, Conveyor, Transmission; Hose; Molded goods; Soles and heels; Bogie wheels; Tank track pads; Inner tubes; Rubber mountings; Reclaimed rubber; Proofed goods; Dipped goods; Sponge and cellular rubber; Battery cases; Fuel cells; Hard rubber goods; De-icer boots, Sea markers.

PATTERSON, P. D. German rubber industry. Off. Pub. Bd., Report, PB 167. 1944. 25 p. Price: Mimeo.- .25¢
CIOS I - 7

Economic and technical information on the German and French rubber industries and their relationships. This includes description of plant at Ets. Colombes Goodrich, discussion of rubber conference held at Heidelberg, and description of Office du Caoutchouc (Office of French Rubber Control). Appendices list personnel in the European rubber industry, documents captured and raw material samples brought back to the United Kingdom. Processes in the heat treatment of Buna and compounding are described.

PATTERSON, P. D. Synthetic rubber plant, Ludwigshaven. Off. Pub. Bd., Report, PB 176. 1945. 14 p Price: Mimeo.- .25¢
CIOS XIX-1

Describes generally the I. G. plant at Ludwigshafen-Oppau and contains valuable information on the layout of the German synthetic rubber industry as a whole, including a diagrammatic plan. Some description is given of the Buna plant which produced Buna S III and Buna SV, a product unsuitable for tires, and information on size and condition of the Buna and Carbide plants.

PERRY, G. H. and GARVEY, S. B. Miscellaneous rubber targets. Off. Pub. Bd., Report, PB 194. 1945. 12 p. Price: Mimeo.- .25¢

Investigation of six rubber plants in Frankfort-Hanau area. Peters Pneu Renova was a large, modern retreading plant in good condition and has considerable inventories of raw materials. Plant and operations briefly described and recipe for the recap stock given. Interesting information on rubber to metal adhesion, Naftolen, Alumina pigments, and "I-Gummi" of the I. G. was found in the laboratory of the Metallgesellschaft A. G. Hanauer Gummischuh Fabrik A. G. had been destroyed and only outlines of the operations could be reconstructed. Plant of Peters Union Tire Factory had been dismantled. Frankfurt plant of Continental Gummiwerke A.G. had been destroyed, and rubber activities of Dartex A.G. had apparently been moved.

PERRY, G. H. and others. Deutsche Dunlop Gummi Compagnie A. G., Hanau-Am-Main - Miscellaneous chemicals. Off. Pub. Bd., Report, PB 191. 1945. 46 p. Price: Mimeo.- .25¢ CIOS XXIII - 2

This plant was the second most important tire plant in Germany, making 32% of the tires for German Air Force. Plant considerably damaged, and looted. Samples of Koresin and Buna SS were sent to Rubber Reserve Co. Lab. in Akron, Ohio and Rubber Control in London. Laboratory and giant tire building shop were completely destroyed. Continuous thermal breakdown apparatus damaged. A general outline of plant and equipment is given. A discussion of the Bunas used is given and the process is described in some detail. Typical recipes used in this plant are given. Reclaim methods are also described. Production figures, cost of raw materials, code names for chemicals used, recipes and a list of documents collected are given in appendices.

WHITE, W. L., and SCHATZEL, R. A. Franz Clouth Rheinische Gummiwarenfabrik Nippes, Cologne. Off. Pub. Bd., Report. PB 220. 1945. 13 p. Price: Mimeo.- .25¢
CIOS XXVI-20

Description of plant, equipment, tank linings, conveyor and transmission belts, and type of operations at factory making molded goods, conveyor and transmission belts, rubber covered tanks and fittings, and rubber covered rolls. Formulas are given for: Under-covering of the hard linings and formula (H 17/6685 - B. Platte); Various inorganic acids - H36/6685- R-hart; Organic and oxidizing acids - H.128; Friction 1475/44 (k) - Conveyor belt; Skim 3000/44 C - Conveyor belt; Cover 6-14-50 - Conveyor belt; Cements used to apply to core also used on metal for tank linings; Compounds for hardnesses ranging from Pussey Jones 40-45 to hard rubber; Molded goods.

WHITE, W. L. and SCHATZEL, R. A. Harburger Gummiwarenfabrik - Phoenix A.G., Harburg. Off. Pub. Bd., Report, PB 219. 1945. 16 p. Price: Mimeo.- .25¢
CIOS XXVI - 19

Before the war this company was the second largest rubber company in Germany, manufacturing tires and tubes, footwear, hose, belting, druggist sundries, toys and molded goods. This report deals, in some detail, with flat transmission and conveyor belts, rubber reclaiming and manufacture of hose. Equipment, processes, formulas and mixing procedures are given.

STONE, CLAY, AND GLASS PRODUCTS

INTERROGATION OF Paul Francis Van Den Boogaard. Off. Pub. Bd., Report, PB 73. 1945. 2 p. Price: Mimeo.- .10¢

Reports experiments to obtain a resistant material for construction of houses, etc. Clay is analyzed, mixed with 10% cement, set in a mould, compressed at different temperatures, the press then being removed and the resulting cube subjected to a high electrical charge. The cube is then tested for resistance by steady pressure.

RAMM, E. T. and MULLETT. Interrogation of Dr. Bürck of Telefunken - Berlin. Off. Pub. Bd., Report, PB 295. 1945. 2 p. Price: Mimeo.- .10¢

CIOS ER 205

Dr. Bürck related his work on tubes with glass envelopes and copper glass seals. Typical amplifiers are described using tubes of glass construction and using LD-10 (ceramic construction). He also told of trouble developing when trying to comply with demands for shorter wave lengths. His last work was on LD-20 improvements in construction of grids and reduction of losses.

TEXTILE MILL PRODUCTS

GIVENS, J. H. and others. Continuous and staple fibre plants of Germany. Off. Pub. Bd., Report, PB 377. 1945. 223 p. Price: Mimeo.- $2.00

This report is known as the Rayon report. The report is divided into 4 sections; I. Introduction; II. General survey of the industry, which includes a discussion of acetate, cuprammonium, viscose, synthetic fibres and equipment; III. Description of the individual German plants and/or processes; and, IV. Miscellaneous items of equipment. Part II of the report is a brief digest of the information obtained, treated by processes. To some extent it also serves as a guide to the more striking features observed at the different factories. Twenty rayon or staple fiber factories are separately described in Part III, together with subjects closely related to synthetic fiber manufacture, such as, research work on the lactams at Leverkusen and Ludwigshafen, the manufacture of wood, pulp, carbon disulphide, acetylene products, and other synthetic fibers, raw materials, fiber-finishing compounds, and twisting equipment. Report contains many charts, tables and photographs.

KRAUSSE, R.S. I.G. Farbenindustrie in Dormagen. Off. Pub. Bd., Report, PB 177. 1945. 13 p. Price: Mimeo.- .25¢ CIOS XIX - 5

Dormagen plant of I.G. Farbenindustrie visited in March, 1945. During the war it produced cupra-ammonium, rayon, cuprama staple fiber, synthetic upholstering materials, and cellulose acetate (used as backing for safety film). Report describes briefly technical advances made during war years in production of above materials. Of special interest is a machine for continuous spinning of rayon from solution to bobbin. An improved process for the esterification of cellulose is also described.

VON BERGEN, W. German Army "Einheitstuch"; Standard cloth field gray. Off. Pub. Bd., Report, PB 209. 1945. 18 p. Price: Mimeo.- .25¢ CIOS XXV - 29

A study of the shade development and the use of vat dyes in the Standard cloth of the German Army and the dyeing problems connected with it. Various changes in shade of uniform discussed, with particular reference to dyeing specifications, with advantages and disadvantages of vat dyeing as opposed to chrome dyeing. Problems involved in using reworked wool, wool waste and razor staple in the fabric and their reaction to dyeing process. Study was also made of infra-red sensitivity of all dyes in question.

TRANSPORTATION EQUIPMENT

ABSON, W. Report on aircraft instruments etc., produced by firm Albert Pattin of Berlin and Wesben (Interrogation of Herr Rolla). Off. Pub. Bd., Report, PB 147. 1945. 3 p. Price: Mimeo.- .10¢ CIOS ER 215

Herr Rolla had been concerned with the following developments, among others: automatic pilots for single and 2 and 4 engined aircraft; gyro-compass in particular for use with small "Schnell" boats; replacement of platinum by a gold alloy for various potentiometres used in automatic pilots and compass systems; electrical bombsight.

APPLEYARD, D.C., and BIOT, M.A. The Horton tailless aircraft. Off. Pub. Bd., Report, PB 260. 1945. 55 p. Price: Mimeo.- .50¢ CIOS XXIII - 6

Brief account of the Horton brothers' careers and of their interest in tailless gliders and powered air-craft which has led, during the war, to the development of a jet-propelled fighter and a six-engined transport intended for post-war civil use. Descriptions are given of Horton types I to XII and details are included of special aerodynamic, structural and mechnaical features. Photographs and drawings are included.

ASHLEY, H. C. and WHITE, C. F. Flugtechnische Fachgruppe: Prototype glider. Off. Pub. Bd., Report, PB 116. 1945. 8 p. Price: Mimeo.- .10¢ CIOS ER 68

Interview with Dr. Heinemann, manufacturer of prototype glider of the P-13 (DM-1) type: plans for the development of a new type of plane capable of attaining supersonic speed were under way. The difficulty was to design a plane that could fly at low as well as high speeds. Rocket propulsion similar to that used in the Messerschmitt 163 was contemplated. Three test models were planned for determining (1) the most suitable aircraft structure for low as well as high speeds (2) efficiency of operation under jet power (500 - 750 m.p.h.). (3) efficiency of operation under rocket propulsion (1,250 m.p.h.). Technical details as to the aerodynamic properties and construction of the DM-1 are reported.

BARNES, J. W., and SUDWORTH, J. The Horn Geratebau, Leipzig and Plauen. Off. Pub. Bd., Report, PB 276. 1945. 6 p. Price: Mimeo.- .10¢

This report presents information obtained from interview with Dr. Horn and examination of his aircraft instrument factory. Plant and standard and special types of equipment are described. Experiments had been underway on a form of erection system for vertical gyros similar to that used on the Mk. I Electric Vertical Gyro. The principle is to employ liquid switches sensitive to gravity to move iron armatures by means of solenoids. The movement of each armature causes a horizontal shift of the center of gravity of the inner gyro assembly. Brief information is given on gyro control gear, lubrication of gyro bearings, altitude indicators, alloys for gimbal and frame construction, governor for rate gyros. Firms supplying gyro parts to Horns and instruments and documents removed from factory are listed.

BENNETT, G. E. Montage-Werkstatt, Lichtenfels - Carl Schenck G.M.B.H., Darmstadt. Off. Pub. Bd., Report, PB 275. 1945. 6 p. Price: Mimeo.- .10¢ CIOS XXV - 11

Reports of visit to Montage-Werkstatt (engaged in testing and repair and redistribution of aircraft instruments, particularly radio altimeters and their component parts and small instrument electric motors) and to Carl Schenck G.M.B.H. (engaged in the design and manufacture of balances, conveying plants and testing machines). Descriptions of test equipment and lists of documents removed are included.

BIOT, M.A., and JAYNE, J.M. Horton tailless aircraft. Off. Pub. Bd., Report, PB 258. 1945. 30 p. Price: Mimeo.- .25¢ CIOS XIX - 2

A short description and 16 photographs and drawings of a tailless jet propelled fighter, the H-IX-V2, designed and built at Goingen by Horton Bros. Some data is also presented of the H-VIII, a large six-engine transport flying wing now under construction and other Horton aircraft. A view of the H-VIII drawn from memory, and 5 illustrations of other aircraft are included. Also included is a complete list of captured documents related to Horton airplanes.

CHESHIRE, FRANK E. German railroad technical development. Off. Pub. Bd., Report, PB 370. 1945. 20 p. Price: Mimeo.- .25¢ CIOS XXIV - 17

Report on the German Railroad: (1) organization; (2) tracks, roadbed, bridges; (3) emergency restoration and maintenance; (4) communications; (5) signals and train control; (6) mass wartime transports; (7) car retarder yards; (8) locomotives; (9) diesel power; (10) fuel; (11) passenger and freight cars; (12) brakes and couplers; (13) journal bearings; (14) lubricants.

DAVIES, HAROLD. German manufacture of airscrews by the Vereinigte Deutsche Metallwerke organization. Off. Pub. Bd., Report, PB 269. 1945. 20 p. Price: Mimeo.- .25¢ CIOS XII - 6

Report on the largest German producer of airscrews which controlled the output of the French airscrew industry during the occupation. Despite activities of the V.D.M. factories in France, production of airscrews was unable to keep pace with construction of new aircraft. Principal causes of shortage were the lack of raw materials and machining capacity for companies. A list of V.D.M. factories in Germany shows the dispersal of airscrew manufacture and storage depots. Lists of components and supplies and bottlenecks in production are also given.

DEVONS. Interrogation of Albert Speer & Members of the Ministry of Armaments and War Production. Off. Pub. Bd., Report, PB 112. 1945. 2 p. Price: Mimeo.- .10¢ CIOS - ER 531

Information, based on interrogation of Frydag, June 7, 1945, on the method of translating aircraft program into requirements for components and spare parts. Aircraft program was based on requirements for three types of equipment (instruments, electric, hydraulic) and for engines and engine accessories. Aircraft program was translated into terms of requirements for all items of equipment and engine accessories on the Hollerith. A general percentage was added for spare components. The translation of an aircraft program into requirements generally took one month.

DUNN, R.W., and others. Bartensleben Salt Mine, Morsleben (Division of Askania Werke, Berlin). Instruments and equipment. Off. Pub. Bd., Report, PB 277. 1945. 12 p. Price: Mimeo.- .25¢

Facilities and organization of a plant for manufacture of aircraft instruments and onto pilots located in a salt mine.

DURHAM, M. Reichskommissar fur die Seeschiffahrt und Seeschiffahrtsamt. Off. Pub. Bd., Report, PB 66. 1945. 5 p. Price: Mimeo.- .10¢

Report on organization of German merchant shipping. The Reichskommissar fur die Seeschiffahrt (RKS) was appointed in May 1942 and the Seeschiffahrtsamt des Reichsverkehrsministeriums was put at his disposal. Appendix gives approximate cargoes shipped by German trampers by commodities and by motor sailing vessels in the Baltic and Northsea, 1943, 1944, 1945, and also tons per year by liners.

EARWICKER, G.A. Focke-Wulf Structural Research Station. Off. Pub. Bd., Report, PB 261. 1945. 7 p. Price: Mimeo.- .10¢ CIOS XXIV - 1

Report on research in aircraft structure at Focke-Wulf, covering the following topics: Synthetic resin glues for wood, wood-to-metal glues, sealing compounds, for pressure cabins, plastics, laminated wind screens, exhaust contamination tests, fuels and lubricants, corrosion. Most of the information given is very brief.

ERIKSON, R. E. and BROWN, T. S. Bombproof Messerschmitt Assembly Plant, Weingut II, Landsberg. Off. Pub. Bd., Report, PB 119. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 78

Description of an allegedly bombproof Messerschmitt assembly plant under construction. 30 per cent complete. The outer shell was designed to house a four-story assembly plant. Planes were to be catapulted from the building, thus making an airfield in the vicinity unnecessary. Unique method of construction: A gravel fill (arched roof) eliminated the use of timber forms; 3 meters of the total 5 meters of concrete was poured; the inside was then dug out and interior construction immediately begun. Floor loadings: 1000 Kg. per sq. meter. Pumperete method used for depositing of concrete.

FAGAN, R.H. Aircraft production activity of the Peugeot organization, Montbeliard, France. Off. Pub. Bd., Report, PB 257. 1944. 6 p. Price: Mimeo.- .10¢ CIOS XI - [redacted] 5

Very brief report on the Peugeot company, manufacturer of power plants (minus engines) for German aircraft.

FAGAN, R.H., and others. Aircraft works of Koninkijke Maatschappij "De Schelde". Off. Pub. Bd., Report, PB 256. 1945. 67 p. Price: Mimeo.- .50¢ CIOS IX - 5, 6

Report on a Dutch aircraft firm ("De Schelde") engaged in the production of wings for Dornier 24 Flying Boat. The report covers production statistics, floor plans, list of contractors, list of key personnel, classification of construction material; also some data on construction methods.

FLETTNER, ANTON. Flettner helicopters. Statement by Anton Kransberg. nr. Frankfurt a. Main. Off. Pub. Bd., Report, PB 137. 1945. 3 p. Price: Mimeo.- .10¢ CIOS ER 150

A signed statement by Flettner, proposing to SHAEF that he be granted permission to finish his helicopter FI 339.

FOSTER, H. E. Discovery of the Luftwaffe archives, other targets. Off. Pub. Bd., Report, PB 108. 1945. 3 p. Price: Mimeo.- .10¢ CIOS ER 47

Brief description of contents of archives found in Heldburg Castle: (1) German air force records going back to 1889, (2) records showing growth of German Air force, production rates, mobilization plans, tests, equipment, (3) record of air operations in World War II, (4) air intelligence records.

GARNER, H. M. Interrogation of Dipl. Ing. Hohler. Off. Pub. Bd., Report, PB 141. 1945. 1 p. Price: Mimeo.- .10¢

Interrogation of Hohler, test pilot for D.V.L. (flight research): he specialized in performance spinning. Aircraft tested were Me. 109, Ar 90, Bu 181, and Ju 87. Comments on recovery from spins. Organization chart of D.V.L. is shown.

GOLDIE, C. H., and REASON, S. J. Aerodynamisches Institute der Technischen. Off. Pub. Bd., Report, PB 37. 1945. 3 p. Price: Mimeo.- .10¢

Gives brief description of the departments, scientific staff and the work that was in progress at the Institute.

GILSON, J. C. and LONDON, R. C. Drager Werke, Leubeck. Off. Pub. Bd., Report, PB 139. 1945. 2 p. Price: Mimeo.- .10¢ CIOS ER 173

Resume of intelligence gained by interview with personnel having to do with aircraft oxygen equipment, safety equipment and diving apparatus. Full details on all the oxygen equipment, of the reasons for design changes, and of any special manufacturing processes used were obtained.

HARKINSON and others. Deutsche Forschungsanstalt Für Segelflug. Off. Pub. Bd., Report, PB 122. 1945. 8 p. Price: Mimeo.- .10¢

Report on the glider research institute at Ainring and Prien. This establishment conducted research on glider towing, pick-a-back combination, glide bombs, special aircraft for high altitude (60,000 ft. and higher), high mach number, application of the rocket, coal fuel and argus Rone (V-1) power units to aircraft, remote control of winged bombs and missiles, automactic pilots, television remote control of guided missiles, and upper air meteorology. This report is only preliminary and gives information on the organization of the institute and types of research done in each division and more detailed description of sailplanes used in high altitude soaring.

HOTSON, A.W. Focke Wulf Structural Laboratory, Detwold. Aircraft-target, CIOS 25/19. Off. Pub. Bd., Report, PB 265. 1945. 36 p. Price: Mimeo.- .25¢ CIOS XXVI - 8

Report on a visit made for the purpose of obtaining information on the test equipment and testing technique used by Focke-Wulf in their research and development work on aircraft structures. Primary attention was given to the static and dynamic testing of aircraft structures and components. The equipment used for mechanical testing of materials was also examined. The report is given in the form of a list of the equipment, with photographs and some details of test methods and policy. Methods of testing complete airframes and wing fuel tanks, static strength test of engine mounting, and dynamic tests of tail end fuselage, of wooden tailplane, and of welded tail leg fork and longeron are described.

JAYNE, J.M. German aircraft maintenance. Off. Pub. Bd., Report, PB 268. 1945. 21 p. Price: Mimeo.- .25¢

Report on the organization of the German air force, with special emphasis on aircraft maintenance methods: Structural checks, engine, propeller, overhaul, greasing, washing, storing, lines, quick-change stands, oil dilution, cold weather maintenance, modifications, spare parts, oil changes, spark plugs, radio, radar, training, forms, design of aircraft.

LAMBERT, M. Aircraft engine factories, Paris. Off. Pub. Bd., Report, PB 267. 1944. 17 p. Price: Mimeo.- .25¢

This report contains information regarding types of aircraft and engines found on visits to aircraft engine factories, an airfield, and several caves, used for maintenance and stores depots, in the Paris area. At Gnome Rhone information was obtained in connection with parts of the BMW 801 engine and of a complete power egg consisting of a simplified version of a Bramo 323 engine, installed in a new type of cowling. At Usine Ratier information was obtained on the Me P-8, a new VDM propeller, and at Maurice Farman, Suresnes on the prototype of the He 274.

LELICH, B. P. Luftfahrtmedizinischen Forschungs Institut des RLM (attached to Helmholtz Institut). Off. Pub. Bd., Report, PB 49. 1945. 3 p. Price: Mimeo.- .10¢

Describes briefly two devices for study of effects and cause of death by blast waves. Also discoveries in research on effect of high frequency vibrations on pilots flying jet-propelled aircraft, involving detection and measurements of ultrasonics, reported briefly.

LIPTROT, R., and others. German activities in the French aircraft industry. Off. Pub. Bd., Report, PB 259. 1945. 192 p. Price: Mimeo.- $1.50 CIOS XXII - 1

Detailed report on French aircraft factories employed by the Germans in the following ways: (1) Construction of French aircraft, (2) Construction of components of German aircraft, (3) Series production of complete German aircraft, (4) Design and model production of new types of aircraft, (5) Repair work. The reports on individual firms cover location, personnel, production, control, airfield activities. The report includes a production summary, description of German standard production jigs and detailed data on certain German aircraft models, including diagrams and photographs: Focke-Achgelis helicopters, Ju 488, FW 190, 189 A-1, 300A, BV 144, 222, 238 and SI 204.

LOGAN, L. R. and others. Junkers aircraft targets at Dessau Aschersleben, Bernburg, Rahuhn, Schonebeck, Tarthun, Jessnitz, Halle and Schkeuditz. Research, development and pre-production aircraft factory. Off. Pub. Bd., Report, PB 134. 1945. 12 p. Price: Mimeo.- .25¢ CIOS ER 149

Relates type and condition of each target as well as important discoveries made in each, including Research-Airplant 8-346, regarding behaviour of the air forces on airplanes in the supersonic range.

MEADER, M.J. Survey of production techniques used in the German aircraft industry. Off. Pub. Bd., Report, PB 263. 1945. 14 p. Price: Mimeo.- .25¢ CIOS XXV - 42

Comparison of labor and working conditions, plant layout and internal plant transportation, production practices, machine tools and tooling, new designs, inspection methods and equipment, and production problems in the German and American aircraft industries. Generally, the American aircraft industry can learn little from the Germans in details of production. However, in Germany special encouragement was given to and special reliance was placed upon the development of unconventional products. New products could be put into production or designs changed more quickly and easily than in the United States. A list of production plants visited is included.

NOTCH, and others. Interrogation of Albert Speer and Members of the Ministry of Armaments and War Production - Aircraft production. Off. Pub. Bd., Report, PB 110. 1945. 6 p. Price: Mimeo.- .10¢

Interrogation of Frydag, chief of the aircraft construction section of the Ministry of Armaments and War Production. Frydag had complete power over the airframe industry. It was his job to estimate output to set up production on schedules and to allocate orders. The report describes in detail the difficulties encountered by Frydag, especially as a result of sudden changes in aircraft design.

OSBOURNE, ALAN and SPOFFORD, WILLIAM P. Junkers Flugzeug und Motorenwerke A.G., Ausbildung Dessau. Off. Pub. Bd., Report, PB 387. 1945. 10 p. Price: Photostat $1.00 - Microfilm .50¢

Brief report of visit to German factory to learn details of the jet propulsion gas turbine for aircraft as manufactured there for general gas turbine purposes. Principles and specifications of jet engines are listed.

PERSHOUSE, A. and others Adam Opel A.G., town Russelheim Am Mein. Off. Pub. Bd., Report, PB 50. 1945. 4 p. Price: Mimeo.- .10¢

A discussion of vehicle design questions with Mr. Bohner, Chief Engineer, Opel factory. Both Opel design activities in the war period and German activities generally are discussed. Attention was brought to the new type of 3/4 track heavy army tractor known as S.W.S., the characteristics of which are given in some detail. Opel tests in starting under extremes of cold are compared with Russian practice.

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